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Jobbers to be Offered Anti-Knock Fuel Said to Equal Ethyl Gas

By Paul Truesdell
N. P. N. STAFF WRITER

CHICAGO, Oct. 27

WILLIAM G. LEAMON, developer of Stellarene motor fuel and the process for making it, unfolded before members of the Independent Oil Men of America Oct. 26 a proposition by which, he said, they could begin the sale of an anti-knock fuel equal in every respect to Ethyl gasoline and superior to it in some respects within 6 to 9 months.

Stellarene is made by cracking fuel or gas oil in the vapor phase at atmospheric pressure in the presence of a catalyst, its inventor says. He said that it may be blended with ordinary gasoline in small proportions to meet the anti-knock needs of those cars that are on the borderline of high compression, while in concentrated form it is suitable for the highest compression cars now made or likely to be made in the near future.

Jobbers in Standard of Indiana territory where Ethyl gasoline is monopolized by the Standard under an exclusive sales contract that has more than a year to run, gave Mr. Leamon assurance of orders totalling 14 cars a week of Stellarene. The orders were conditioned upon the stipulation that the product must be the equal of Ethyl gasoline in anti-knock value and must be of good odor.

Mr. Leamon told the jobbers, in a session that lasted nearly all day, if they would assure him of a market for a definite amount of the product, he would do the rest. That is, he would sell refiners on installing the Stellarene process. It is understood that negotiations between Mr. Leamon and two Mid-Continent refiners for the installation of Stellarene plants are now far advanced, with a third refiner much interested.

JOBBERS in Indiana territory are particularly affected because this is the only marketing district in which one oil company has an exclusive contract to sell Ethyl gasoline. However, marketers from all parts of the country showed a great deal of interest in Mr. Leamon's proposal, feeling that any product that could offer honest competition to Ethyl gasoline would be to their interest as throwing the production of anti-knock fuel primarily into the hands of the oil business instead of the chemical industry.

Mr. Leamon told the marketers some facts he said he had discovered concerning the design of the latest automobiles which lead him to think that the preference for anti-knock fuel, which is growing steadily, may shortly be turned into an imperative need for many cars.

"I was expecting, as I presume most of you were, to see a new line of cars offered with a great display of advertising and an intensive selling campaign stressing the tremendous advantages of the high compression motor, and, at the same time, stressing the necessity of using a high compression fuel."

Mr. Leamon said: "Perhaps many of you, as I did, expected General Motors to be the first to bring forth the new variety of car, and, with rapid expansion of distribution facilities through which Ethyl gas was being made available, I had felt for the past six months that the time was approaching when this epochal move would be made.

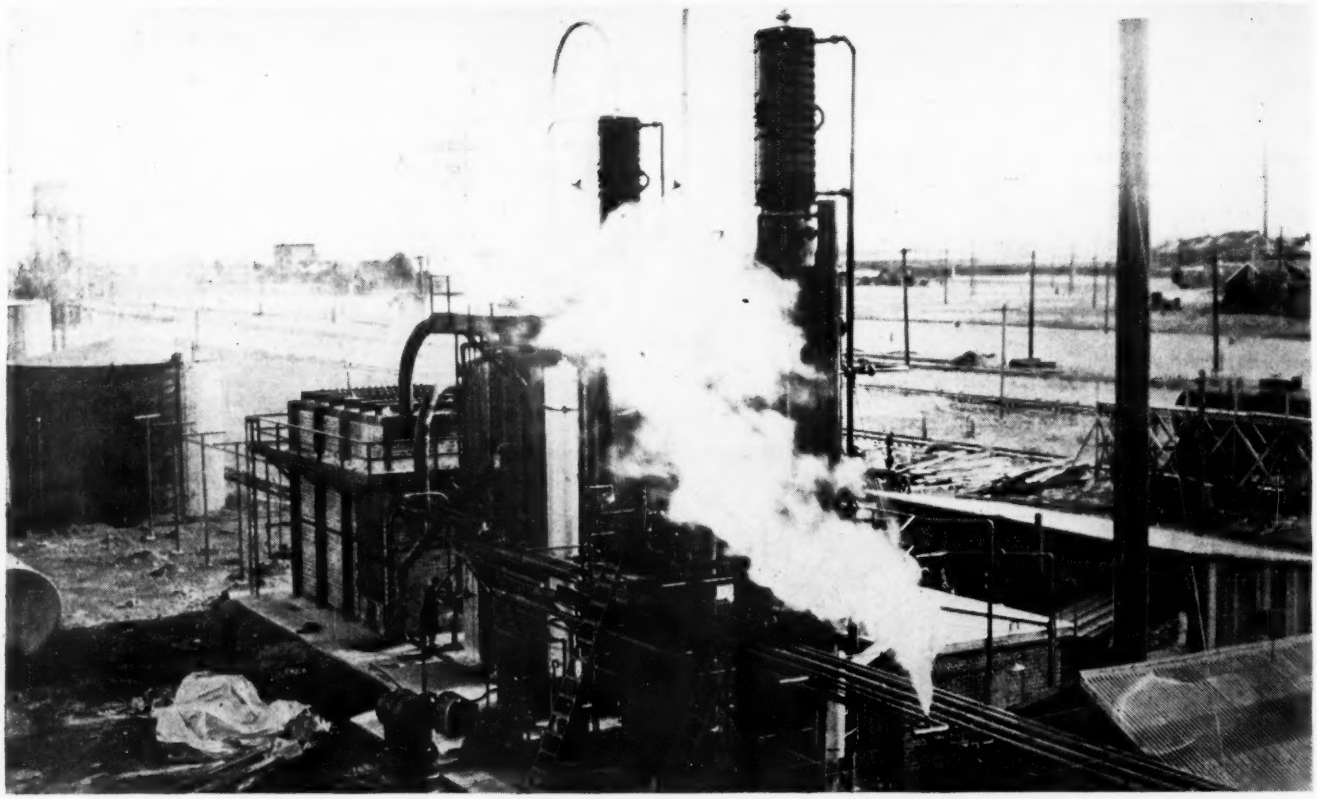
"THEN suddenly Chrysler appeared on the scene with his Red Head motor, and I thought that this was the opening gun, so to speak.

"But I got the surprise of my life when I made my first-hand acquaintance with the Chrysler Red Head motor, Series 72. The facts I discovered and my opinion as to their significance I am offering to you today for whatever you may think they are worth.

"The Chrysler Red Head ran with only slight detonation at wide open throttle when using Ethyl gas. The detonation was not prohibitive on a 50-50 blend of Ethyl gas and Navy. These two facts certified beyond equivocation that either the Chrysler Red Head was not a 6 to 1 compression ratio motor, or if it were, then the volumetric efficiency or the timing was decidedly altered from what has been normal and is the most efficient practice.

"Without going into detail, we found that this motor was 6 to 1; was operating with normal volumetric efficiency but was firing extremely

Staff writer Halbert's article describing general proceedings at the convention of the Independent Oil Men of America Oct. 24, 25 and 26 is to be found on Page 51, in this issue.



Stellarene plant with capacity of 250 barrels a day of finished product. Inland Empire Refinery Co., Spokane, Wash.

late, in fact over 20 degrees later than the standard 72. At this point I began to do some thinking, and this is what I thought:

"You will note that a 6 to 1 compression ratio would give a compression pressure of 132 pounds. Assuming a proper mixture ratio, the maximum pressure would approach 575 pounds. Ethyl gas is made to meet as a standard a 40 per cent benzol blend in Mid-Continent gasoline, according to my advices and tests, and a 40 per cent benzol blend will not withstand 575 pounds. Get this straight: While we speak of high compression motors and compression pressures, the fuels do not detonate at the compression pressures but at the greatly elevated pressures and temperatures resulting from the combustion of the fuels.

"Figure 2 shows the indicator cards of two different motors. The lower curve is a 4 to 1 compression ratio. Note that the compression rises along a line which would reach about 75 pounds for a maximum but, before reaching the end of the piston stroke, the mixture is fired and the pressure curve arises abruptly to over four times that.

"In the 5.3 to 1 motor the pressure rises on a line which would reach about 115 pounds for a maximum, but, because of the firing, the pressure actually rises to approximately 500 pounds. Anybody's make of new Navy gasoline will operate in the 4 to 1 motor without detonating. In other words, it will stand the approximately 350 pounds maximum pressure and its resulting temperature without detonation.

"Nobody's make of new Navy gasoline will operate in the 5.3 to 1 motor without detonation if a proper mixture is fired at any place near that point which gives a resulting maximum pressure, that is, approximately 500 pounds.

Figure 3 illustrates a method of operating the 5.3 motor on a low quality fuel. If the mixture is fired very late and most of the combustion is taking place over a receding piston, the maximum pressure attained may be no higher than in the 4 to 1 ratio motor. That is exactly the principle embodied in this Chrysler Red Head motor. Here is a motor car gaining distribution throughout the country, operating under maximum pressures just enough higher that the driver could feel the difference, but not so high but that it could run on almost any of the high grade motor fuels. But, it could be changed in a few minutes to a high power, high performance motor, the like of which most men have never had the experience of driving. It took us just a few minutes to make the change and the results were astounding.

"This was a Chrysler 72 Red Head motor. My next discovery was that the Chrysler 72 Standard was firing .067 inches before dead centre; whereas the Chrysler 70 had fired at .087 inches—a substantial delaying of the firing which, no doubt, was compensating for a substantial increase in compression. I found that the entire Chrysler series, 50, 60, 70 and 80 were running with a maximum spark advance of from 40 to 43 degrees as compared with earlier established automobile practice of above 50.

"For instance, last year's Duesenberg fired 55½ degrees early; last year's Franklin fired 53 degrees early; last year's Cadillac fired 50 degrees early—30 of which was automatic and 20 manual. The manual advance of the present car has been dropped to 12½, with a total of 42½,—firing later, no doubt, to compensate for higher compression. The

Coming Meetings

State Executive Club, Congress Hotel, Chicago, Ill., Nov. 11, 12.

California Natural Gasoline Association, Biltmore Hotel, Los Angeles, Nov. 15 and 16.

American Petroleum Institute, Hotel Stevens, Chicago, Dec. 6, 7, 8.

Nebraska Independent Oil Men's Association, Hotel Fontenelle, Omaha, Neb., Dec. 14, 15.

Ohio Petroleum Marketers Association Spring Convention and Exhibit Exposition, Neil House, Columbus, O., Feb. 22, 23, 24.

American Oil Burner Association, Hotel Stevens, Chicago, April 3, 4, 5, 1928.

Chevrolet advance has been dropped from 40 to 27.

"Last year's Oakland was 21. Worse still, the Essex was 14 and the Hudson 19. Every one of these cars can be made to develop greater power and run with greater economy by the simple act of retiming.

"FROM my experience I would say that any motor running at 2000 rpm or above should fire at least 50 degrees early in order to generate maximum power, provided, of course, the fuel will stand the resulting combustion pressures and temperatures. So far as the mechanical construction of the car is concerned, the earlier it is fired the more power it will develop up almost to the point where the maximum pressure is developed before the piston reaches top dead centre.

"But from the standpoint of the fuel, the motor is firing too early when the resulting maximum pressure produces detonation. Figure 3 illustrates this condition also. The broken expansion line indicates the presence of detonation.

"We retimed the Red Head so it fired the same as the stock 72, under which condition it knocked quite noticeably on Ethyl gas, but not too much for safe operation.

"Here is what I would like to know: How many of your friends, and how many of you present for that matter, own cars and are operating them today on fuels which would be utterly inadequate were your motor timed for maximum power? Another thing I want to know is how soon are the manufacturers going to notify their service agencies to adjust the timing of their cars for those owners who want the greater power?

"Finally, how many of these high compression cars will there be in operation when that day comes? My investigation to date, and it hasn't progressed very far, indicates that there may be more than half a million such already distributed.

"SUPPOSE an announcement goes forth six months hence and your friends find themselves the proud possessors of a much faster, more powerful car than they knew, what will you have to sell them that they can use? If the announcement were made tomorrow, gentlemen, there is only one fuel, the general distribution of which would permit of its being recommended, and that fuel you all know is Ethyl gas. Certain localities, especially on the eastern seaboard, should have and probably would have recognition given to their benzol blends. Betholene and Amoco are anti-knock fuels equal to or superior to Ethyl gas. But the truth is that in general it would be Ethyl gas or nothing."

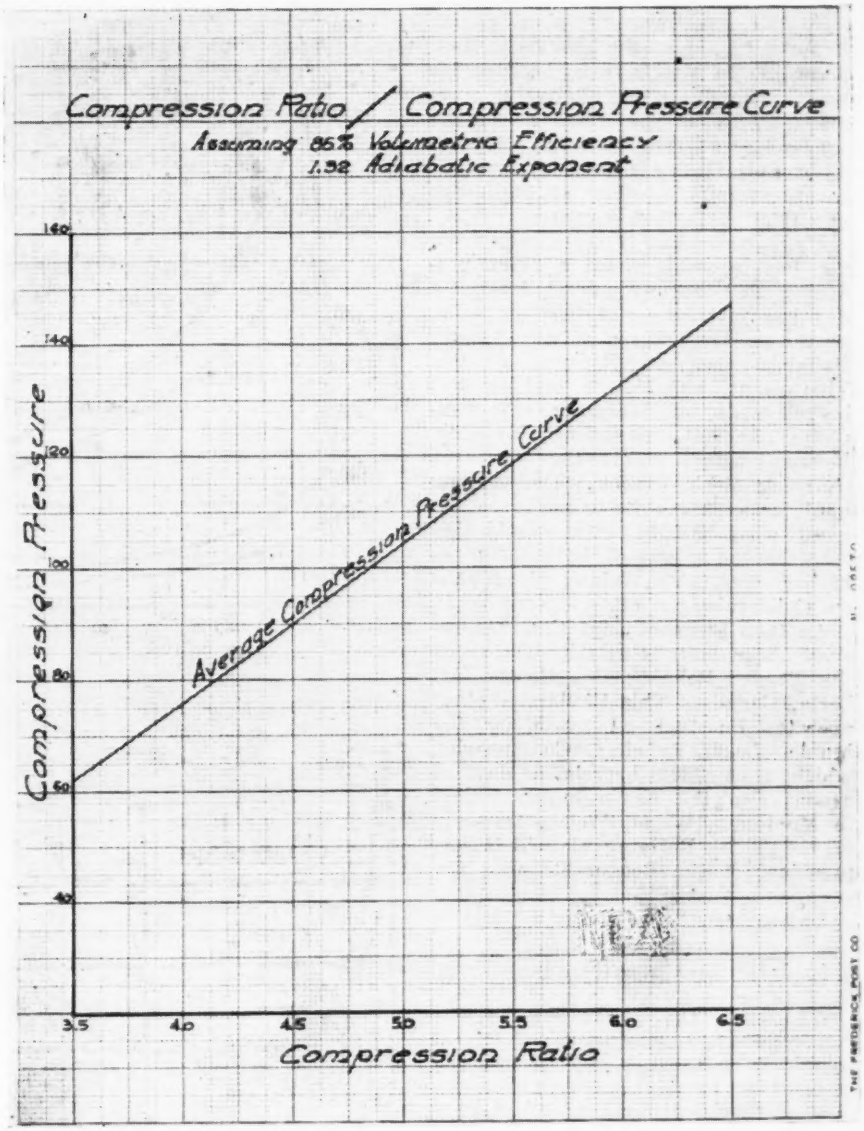


Figure 1

Mr. Leamon's first appearance before the Independent Oil Men of America was last August when he was invited by L. V. Nicholas, president of the I.O.M.A., to present the facts concerning Stellarene to the directors. He did so, at the same time furnishing samples of the fuel which were tested in various ways by several directors.

Reports were made on some of these tests at the meeting yesterday. Two jobbers said they had found Stellarene fully equal to Ethyl gas in anti-knock properties but had found the odor so objectionable that they would not attempt to market it in their territories.

Mr. Leamon stated that he believed this odor was due to the presence of mercaptans which he has found out how to remove by treating the fuel with caustic soda and hypochlorite. He believes, he said, that no further trouble will be met with from the smell of Stellarene.

Gum-forming tendencies of cracked gasoline being an important and much discussed subject, Mr. Leamon was asked as to the gum-forming characteristics of Stellarene. He replied that Stellarene shows approximately twice as great a deposit of gum in the copper dish test as the average liquid phase cracked gasoline. Notwithstanding this, he said, he has never received a complaint of trouble caused by Stellarene in an automobile engine.

He asserted that the plant of the Stellar Refining Co., Newark, O., where the product was first made on a commercial scale, is producing about 200 barrels a day of Stellarene which is all marketed by tank truck to retailers and jobbers close to the plant. Two grades of fuel are sold, he said. One is made by blending the straight run gasoline produced in topping the Corning crude used at the plant with about 20 per cent of Stellarene. The other is straight Stellarene.

The former fuel is sold to the retailer at a price that enables him to offer it at the prevailing retail price and it commands a ready sale. Stellarene is selling now in the territory around Newark at 1 cent above the price of Ethyl gasoline.

A tail gas recovery plant is an important part of the Stellarene unit, according to Mr. Leamon, because the process produces a relatively large amount of fixed gas which leaves the condenser at atmospheric pressure. A compression recovery system recovers around 5 gallons of Stellarene per 1000 cubic feet of gas.

Mr. Leamon has just returned from the Pacific coast where a plant producing 250 barrels of Stellarene a day has just been put into operation at the refinery of the Inland Empire Refining Co., at Spokane, Wash. This plant, capable of making 250 barrels a day of Stellarene, cost complete, $90,000, according to Mr. Leamon. Fuel oil is the preferred charging stock, except where a long haul is necessary to bring it to the plant when freight rates would dictate the use of gas oil because of the higher yield. The Inland plant runs on California gas oil.

Another Leamon plant that has recently been built is at the refinery of the Beaver Refining Co., Coutts, Alberta, Canada. This Stellarene plant operates on fuel oil made by the Maple Leaf Refining Co. nearby, which runs 2800 barrels a day of crude from the Kevin-Sunburst field in Montana. W. M. Welch, formerly of the Tidal Refining Co., Tulsa, is president of the Beaver Refining Co.

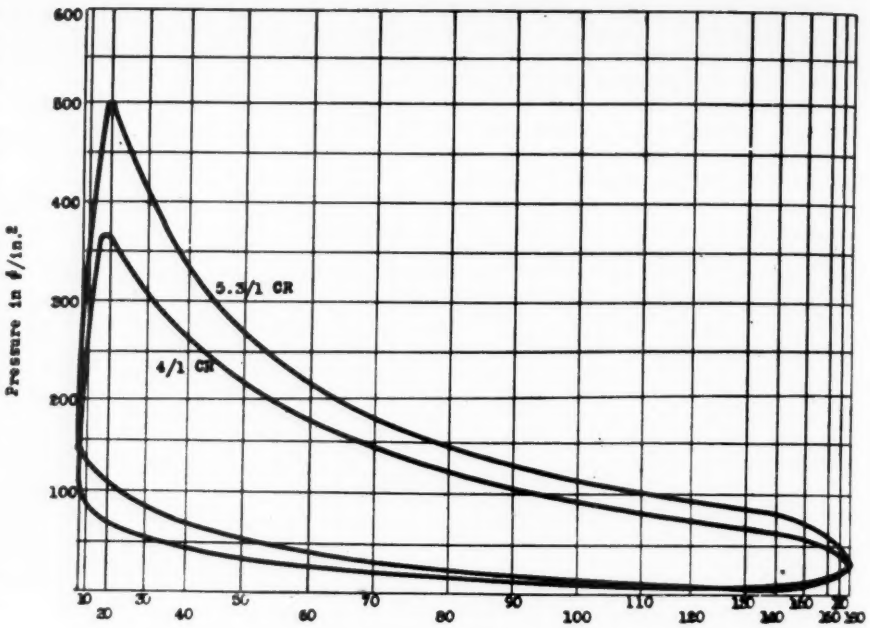


Figure 2

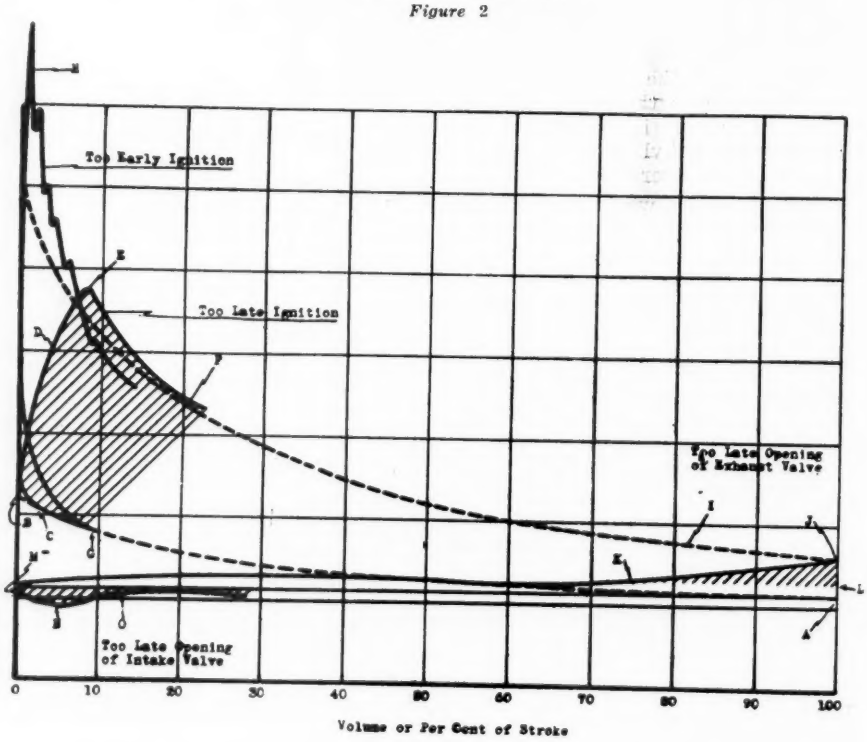


Figure 3

Gasoline Stocks Fall Off in September

WASHINGTON, Nov. 1.—An increase in crude production of 24,000 barrels in September and an increasc of 6,068,000 barrels in stocks of crude east of California, and a decrease of 3,617,000 barrels in gasoline stocks in the United States, are high points of the U. S. Bureau of Mines report of oil industry operations covering September.

Production of light crude totaled 68,789,000 barrels in September, as compared with 68,765,000 barrels in August. Stocks on Sept. 30 east of California were 339,741,000 barrels, while crude stocks in California were 114,981,000 barrels, a decrease of 246,000 barrels.

Gasoline production decreased 294,000 barrels, for the month, but daily average output increased 20,317 barrels in September, a 30-day month, as compared with the 31-day month of August.

Gasoline stocks decreased 3,617,000 barrels in September, standing at 29,738,000 barrels on Sept. 30.

Kerosene output was 4,686,000 barrels in September, an increase of 286,000 barrels over August, while stocks decreased 253,000 barrels, to 8,120,000 barrels on Sept. 30.

Gas and fuel oil production was 32,339,000 barrels, a decrease of 1,759,000 barrels. Lubricant production gained 30,000 barrels, and stocks fell off 14,000 barrels.

Phillips Buys Plant Of Alamo Refinery

TULSA, (*Staff Telegram*) Nov. 1.—Phillips Petroleum Co. of Bartlesville, has purchased the plant of the Alamo Refining Co. at Borger, in the Texas Panhandle, it was announced today. Phillips recently announced that it would enter the refining business in order to obtain an outlet for its large production of Panhandle crude.

The Alamo refinery is a 2,000-barrel modern skimming plant built during the past year. The plant will be enlarged immediately, giving it a capacity of 7,500 barrels per day. M. P. Youker, vice president of the Alamo, will enter the Phillips organization and be in charge of the new construction work. O. L. Cordell, secretary and treasurer of the Alamo, has been head of Phillips' new marketing department for several months.

For the present, O. W. Crick, assistant secretary and treasurer, will continue to handle sales from the Amarillo offices. R. B. Pringle, president of the Alamo, is now an officer of The Independent Oil & Gas Co.

Roxana Plans Pipe Line Outlet For West Texas Crude

Staff Special
HOUSTON, Oct. 28

ADVICES from New York indicate the possibility that another trunk outlet for west Texas crude may be provided by the Ozark Pipeline Co, companion organization to the Roxana Petroleum Corp., and subsidiary of the Shell-Union Oil Corp.

Inquiries have been made for 51,000 tons of pipe at eastern mills, it is said; and estimates have been set up for a trunk pipeline that would connect the Hendricks ranch field, Winkler county, Texas, with the Ozark's Mid-Continent pipeline system near Ardmore, Okla., an airline distance of about 375 miles.

The Roxana has been shipping west Texas crude to its East Chicago refinery, moving an average of 2543 barrels daily in this manner in September.

Roxana-Ozark facilities include refineries of the former at Arkansas City, Kan., Wood River, Ill., and East Chicago; and pipeline systems of the latter in the various Mid-Continent fields, connected by trunklines to Wood River and East Chicago.

Building the Ozark line would bring the total west Texas trunk line outlet to at least 175,000 barrels. Gulf Pipeline Co.'s facilities east from its Midland concentration base will eventually reach capacity of 40,000 barrels daily; Magnolia Petroleum Co. is building an 8-inch line from Midland east to De Leon connection with its Ranger district system that may be rated a 20,000 barrel line, although its pumping installations will permit handling of only 10,000 barrels daily at the start; Humble Pipeline Co.'s two trunks handle 40,000 barrels each from Kemper station, Reagan county, to Comyn connection with its north Texas system and from Kemper to Ingleside, on the Gulf Coast near Corpus Christi.

Illinois Pipeline Co's. 8-inch from Yates field, Pecos county, to its Del Rio tank farm, is rated capable of handling 14,000 barrels daily under the present pumping station arrangement, but eventually this line will accommodate 20,000 barrels daily. Unofficial advices are to the effect the Illinois is going ahead with plans immediately to extend the Yates field-to Del Rio line on to Corpus Christi, a move long considered probable.

Besides the Roxana movement, principal shipments of west Texas crude in tank cars in September were from loading racks of the Southern Pipeline Co. and Southern Crude Oil Purchasing Co. arms of the Pan American group. These Pan American subsidiaries moved an average of 14,610 barrels daily to the affiliated Mexican Petroleum Corp. plant at Destrehan, La.

The Southern also has been selling west Texas crude in tank car shipments to Chalmette Petroleum Corp., and Liberty Refining Co., Ltd., both operating New Orleans district plants. Shipments to Chalmette in September averaged 2632 barrels daily and to the Liberty 757 barrels daily.

Other west Texas tank car movements of crude in September were confined to the following companies:

Big Lake Oil Co., shipped to Rio Grande Oil Co., El Paso, 1000 barrels daily average of Reagan County Crude;

Humble Oil & Refining Co., shipped to itself at Texas City, 1925 barrels daily average;

Southern Pipeline Co., shipped an average of 866 barrels daily to the San Angelo Refining Co., San Angelo, and 1208 barrels daily to miscellaneous destinations.

American Petroleum Co., which is now increasing its tank car loadings from the Hendricks field, Winkler county, averaged shipments of 437 barrels daily to itself at Holston.

The foregoing figures include all tank car shipments for September from the west Texas sulphur crude areas in Upton, Reagan and Winkler counties, but take no account of movements of "sweet crude" from Runnels, Howard and Jones counties.

Shell Issues $10,000,000 Bonds for Pipe Line

CLEVELAND, Oct. 31.—In connection with the proposed building of a pipe line into west Texas Shell Union Oil Corp. is issuing under the name of its newly formed pipe line subsidiary, the Shell Pipe Line Corp., formerly Ozark Pipe Line Co., $30,000,000 25-year 5 per cent sinking fund gold debentures, at 98 and interest to yield 5.125 per cent. The offer has been made through Lee, Higginson & Co., New York.

Shell Union has unconditionally guaranteed the debentures. This issue brings the funded indebtedness of the Shell Union and subsidiaries up to $80,000,000, there being $50,000,000 5 per cent debentures due in 1947 outstanding against the parent corporations. Shell Union has outstanding 10,000,000 no par shares of common stock which represent a capital and surplus equity of $234,822,950 as of June 30, 12st, but after giving effect to this financing.

Consolidated net assets of Shell Union and subsidiaries after deducting all liabilities except the funded debt including the pipe line issue, was $314,822,950 on June 30, J. C. van Eck, president of Shell Union and chairman of the pipe line corporation, wrote bankers.

Earnings of the Shell Union after all charges except federal taxes amounted in 1926 to $38,857,966 and earnings in the first half of 1927 were at the annual rate of $22,918,634 after all charges except federal taxes, Mr. van Eck wrote.

Shell Union property was summarized as follows: approximately 100,000 barrels daily average crude production; 1,850 miles of truck and main pipe lines, and refineries with daily average throughput of 180,000 barrels.

More Oil Men to Aid Tax Conference

CLEVELAND, Oct. 29.—More members of the oil industry have been picked for committees of the North American Gasoline Tax Conference by William A. McAtee, state oil inspector of Missouri who is president of the conference. Announcements of appointments are made in the conference's bulletin.

On the general policy council, which is a steering committee for policies and principles, are Robert L. Welch, New York, secretary and counsel of the American Petroleum Institute; F. G. Driscoll, New York, attorney for Sinclair Refining Co., and James A. Gilmore, Chicago, secretary of the American Oil Men's Association.

On the conference council which will arrange for convention quarters in Memphis next year and the convention program are George S. Allee, Kansas City, president of the Missouri Oil Men's Association; C. M. Sutherland, Lincoln, Neb., secretary of the Nebraska Independent Oil Men's Association, and H. G. Allsup, Jr., Murfreesboro, Tenn., secretary of the Tennessee Independent Oil Men's Association.

It had previously been announced that three oil company attorneys will assist in drafting a model gasoline tax law. They are Frank E. Packard, Chicago, Standard Oil Co. of Indiana; James J. Cosgrove, New York, The Texas Corp., and W. J. Guthrie, Pittsburgh, Gulf Oil Corp.

S. P. Wible Dies

BAKERSFIELD, Calif., Oct. 28.—Samuel P. Wible, president of the McKittrick Oil Co. and the McKittrick Extension Oil Co., who has been prominently identified with the oil business in Kern county since 1894, died in a local hospital this week, after a two weeks illness.

Continental Contracts Admitted In Sinclair-Fall Trial

WASHINGTON, Oct. 31

THE government today succeeded in getting into evidence against Harry F. Sinclair and Albert B. Fall, former secretary of the Interior, three contracts which build up the allegation that Sinclair was more deeply involved in the mysterious Continental Trading Co., Ltd., of Canada, than as a co-guarantor of the Continental's contract to buy 33,333,333 barrels of Mexia crude from Col. A. E. Humphreys. Sinclair and Fall are on trial in the Supreme Court of the District of Columbia on a charge of conspiring to defraud the United States government in the leasing of Teapot Dome naval petroleum reserve in Wyoming to Sinclair's Mammoth Oil Co.

It is contended by the government's prosecutors, Owen J. Roberts of Philadelphia and former U. S. Senator Atlee Pomerene of Cleveland, that profits of the Continental were invested in Liberty bonds and $230,500 of the bonds were turned over to Fall's son-in-law, M. T. Everhart, and placed in Fall's name in a safe deposit vault in Everhart's bank at Pueblo, Colo.

Over the vigorous opposition of Martin W. Littleton, Sinclair's chief counsel, H. L. Phillips, president of the Sinclair Crude Oil Purchasing Co., identified three contracts which Sinclair had signed and which indicated he was one of the chief spirits behind the Continental. Mr. Roberts read the contracts to the jury.

Earlier today, however, Justice Frederick L. Siddons ruled that Sinclair's name could not be used in connection with the early stages in the formation of the Continental, which corporation Mr. Roberts branded as a "mere instrument to accomplish that which the defendant Sinclair, as is charged here, with the defendant Fall was conspiring to bring about—to defraud the United States."

Most of the testimony given the last week was a repetition of the testimony in the government's cancellation suit against Sinclair's company, the Mammoth Oil Co., at Cheyenne, Wyo., two and a half years ago.

Chief among the few differences of this trial from the Cheyenne trial was the ruling of Justice Siddons that the testimony of Sinclair before the senate public lands committee in December, 1923, could not be used against him and the court's refusal to order Everhart to tell where he got the $230,500 in Liberty bonds. Everhart stood on his constitutional right pleading that his testimony might incriminate him.

The story of the Continental Trading Co. has never been told from the witness stand. Two men involved in its organization have fled this country. They are James E. O'Neil, former president of Prairie Oil & Gas Co. and H. M. Blackmer, former chairman of the board of Midwest Refining Co., a Standard Oil Co. of Indiana subsidiary. Sinclair was another but he did not take the stand in the Cheyenne civil suit and could not have been forced to testify. He already is under sentence for contempt of the senate for refusing to answer some of the questions asked him at the inquiry into the leasing of the petroleum reserves. H. M. Osler, the Canadian lawyer who looked after the organization details of the Continental, was sought but he had gone to Africa.

Col. Robert W. Stewart who guaranteed with O'Neil and Sinclair the Continental's contract with Col. Humphreys, was out of the country inspecting properties of the Pan American Petroleum & Transport Co. at the time of the Cheyenne trial. The Pan American properties were later bought by the Standard of Indiana and associated interests. Col. Stewart is in Washington, waiting to testify but the legal fight that is being waged constantly between counsel for the government and the two defendants, has prevented his taking the stand.

Former U. S. Senator Charles S. Thomas of Colorado who drew up the Continental contract as attorney for Col. Humphreys testified Friday that it was his recollection that O'Neil and Sinclair suggested the guarantee in which Col. Stewart also participated. Ex-Senator Thomas testified that he drafted a preliminary contract not knowing that such a corporation as the Continental existed. He said Blackmer remarked that the Continental was the vendee in the transaction. Col. Humphreys demanded a guarantee which was given by the Prairie and Sinclair Purchasing company which is owned half and half by the Sinclair Consolidated Oil Corp. and the Standard of Indiana.

Oil men who testified to the secrecy of the negotiations involving Teapot Dome leasing included Frank E. Kistler, former president of Producers & Refiners Corp.; Amos L. Beaty, chairman of the board of The Texas Corp., and Birch Helms, formerly with the Texas Pacific Coal & Oil Co. but now with Blair & Co., New York bankers. Most of the testimony during the week tended to build up the secrecy angle of the alleged conspiracy, and to trace the Continental's Liberty bonds to Fall.

Phillips Sells Okla. Natural Gas Co.

CLEVELAND, Oct. 31.—The American Natural Gas Corp. has been formed to take over the properties of the Oklahoma Natural Gas Corp. which the Phillips Petroleum Co. has just sold to a syndicate of eastern bankers headed by G. L. Ohrstrom & Co., New York. Frank W. Phillips, president of the company that bought the Oklahoma Natural Gas properties last May, issued this statement in New York:

"The principal object of the company in purchasing the Oklahoma Natural Gas Corp. some months ago was to secure additional markets for the company's large production of natural gas, principally in the Panhandle district of Texas.

"This is being accomplished under this sale through an arrangement with the new owners of Oklahoma Natural Gas Corp. to carry out the Phillips program for construction of a pipe line at the proper time to the Panhandle district, and also to give Phillips Petroleum Co. the preferential right to supply the gas for their system as it may be expanded."

The American Natural Gas Corp. will be directed by Robert C. Sharp of Tulsa, who has been the active head of the Oklahoma corporation. The new corporation has issued $10,000,000 6½ per cent sinking fund debentures with stock purchase privileges. The bonds are dated Oct. 1, 1927, and due Oct. 1, 1942.

Besides the bonds capital issues of the new company are 50,000 issued of 250,000 authorized no par cumulative preferred stock and 651,200 shares issued of 2,000,000 authorized no par common stock. Of the common stock 525,000 shares have been deposited in a voting trust until 1932. The preferred stock is to carry a dividend of $7 a share a year.

Properties include 215,000 acres of gas leaseholds and gas purchase contracts covering 125,000 acres additional reserves; 950 producing gas wells, 2,275 miles of transmission and distribution pipe lines, and 15 compressor stations. The corporation also has a call on the Phillips Petroleum gas production in the Amarillo field of Texas.

This new company is not the American Natural Gas Co. which operated in the vicinity of Pittsburgh, Pa. The Pittsburgh company was merged last year with the Peoples Natural Gas Co., a Standard Oil Co. of New Jersey subsidiary.

Swan-Finch Oil Corp.—Stockholders at annual meeting Nov. 15 will vote on proposal to permit retirement of preferred stocks in blocks at any time. Under present charter the issue is callable only as a whole.

Pontotoc Campaign Follows Seminole

TULSA, Oct. 29

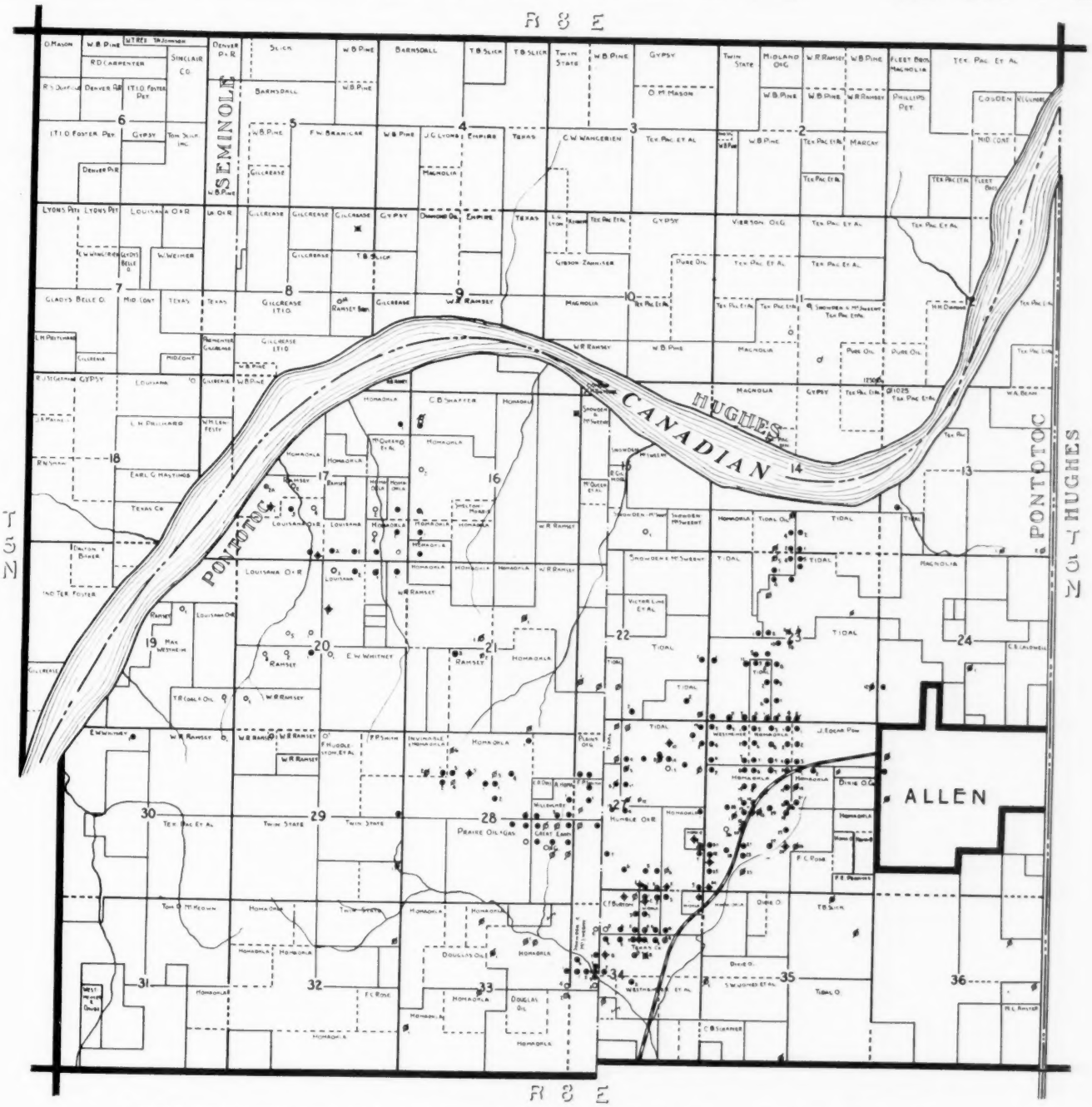
WITHIN the shadow of the mightly Seminole district, a drilling campaign is now under way that is second in point of activity to anything in the Mid-Continent. It is in the northeast corner of Pontotoc county, near Allen, and in the third township due south of the Wewoka field.

About 40 operations, including locations, now constitute the campaign. As yet major companies have not interested themselves except to acquire small acreage. The campaign is now being conducted by such well known independents as the Louisiana Oil Refining Co., Homa-Okla Oil Co., Ramsey Brothers and Texas-Pacific Coal & Oil Co. Less than 20 wells drilled in what is referred to as the Allen deep sand are making upward of 3000 barrels daily.

Southeast of the new development and in the same township is the old Allen shallow field discovered in 1913. It produces from a sand found between 700 and 800 feet of average thickness of 28 feet. This shallow pay yielded wells with initial production ranging from 5 to 100 barrels. As of Oct. 1 it had 127 wells making 400 barrels daily. Principal operating companies are Tidal Oil Co. and Homa-Okla Oil Co. and other shallow sand operators are the Allen Wells Oil & Gas Co., Bentley et al, Burton & McMann, Great Lakes Oil & Gas Co., Markham & Humble, Markham & Gypsy, Prairie Oil & Gas Co., Snowden & McSweeney, The Texas Co., Westheimer & Daube.

As of the same date, the deep sand production was as follows:

Company	Lease-Loc.		Wells	Prod.
Homa-Okla	Milner	17-5-8	3	460
Homa-Okla	Wheeler	16-5-8	1	30
Homa-Okla	Milner	16-5-8	1	60
Louisiana Oil Ref.	Warfle	20-5-8	1	230
Loisiana Oil Ref.	McElroy	17-5-8	1	196
Louisiana Oil Ref.	Harjo	17-5-8	2	104
Ramsey	Butler	20-5-8	1	20
Ramsey	Warfle	20-5-8	1	110
Ramsey	Milner	17-5-8	1	270



Pontotoc county, Okla., new development near old Allen pool, showing wells completed in Secs. 16, 17 and 20

Ramsey	Shipley	20-5-8	1	0
Ramsey	Webb	20-5-8	1	550
Shaffer	Yoakum	16-5-8	1	340
			15	2370

Not included in the tabulation of production are two wells which have materially swelled the total output. One is the No. 2 McElroy of the Louisiana Oil Refining Co., SW SW SE of 17-5-8, which was estimated as high as 1,000 barrels per day, but is being pinched to 500 because of considerable sediment in the oil, probably rotary mud which was in the hole when the sand was hit. The pay in this well was 2447-74 feet.

Another well which promised to add to the total production as this was written was the Homa-Okla company's well in the SE NE NE of 17-5-8, making small flows from sand at 2550-2612 feet.

C. B. Shaffer's No. 1 Gilcrease, in the NW NW NE of 36-5-7, properly should be included in the consideration of the field, although it is some four miles southwest of the principal development. It had sand at 2264-2340 feet and initial production of 235 barrels. Water appeared and it is now in a re-cementing job to shut it off.

The productive sand is a zone in the Savanna sandstone of the Pennsylvania age. In most of the wells in T. 5-8, the pay sand is broken and many of the wells show some water. Dry holes appear here and there over the field and several large gas wells have been drilled. The development thus far indicates the pay will be found to be erratic as to production and saturation.

A list of the completions in the deep pay as of middle October shows initial productions that, while not mentionable in the same breath with those in the Seminole district, are not to be disregarded considering the shallow depth. A partial list of these is as follows:

Homo-Okla No. 1 Milner, SW NW SW 16-5-8, sand 2498 feet, total depth 2506 feet, completed 6-23-'27, initial 562 barrels natural.

Homa-Okla No. 1 McCall, NW SW SW 16-5-8, sand 2504-11, completed 2-25'27, initial 125 barrels natural.

Homa-Okla No. 1 Watson, SW SW SW 16-5-8, sand 2504-10,162 barrels natural.

C. B. Shaffer No. 1 Yoakum, SW NW NW 16-5-8, sand 2434-42 and gas sand 2442-48, initial 300 barrels natural, completed 8-24-'27.

Homa-Okla No. 1 Milner et al, NE SE SE 17-5-8, sand 2438-47, total depth 2456, completed 8-24-'27, initial 638 barrels.

Homa-Okla No. 2 Milner et al, SW SE SE 17-5-8, sand 2460-2497½, completed 8-31-'27, initial 90 barrels.

Homa-Okla No. 3 Milner, SE NE SE 17-5-8, sand 2477-87, completed 9-7-'27, initial 230 barrels.

Louisiana Oil Refining Co., No. 2 McElroy, SE SW SE 17-5-8, sand 2447-74, made 518 barrels in 24 hours pinched.

Louisiana Oil Refining Co. No. 2 Warfle, NE NW NE 20-5-8, sand 2441-50, completed 7-14-'27, initial 322 barrels natural.

Ramsey Brothers No. 1 Butler, NE NE NE 20-5-8, sand 2500-12, completed 7-28-'27, 41 barrels natural.

Ramsey No. 1 Webb, NE NE SW 20-5-8, sand 2444-52, completed 10-7-'27, 713 barrels natural.

Ramsey No. 1 Warfle, NW NE NE 20-5-8, sand 2420-28, completed 8-24-'27, initial 125 barrels natural.

Efforts to get production in this deeper pay in the old Allen field have resulted only in some good sized gas wells. One deep dry hole shows on the record of the old field, this being the Homa-Okla's No. 1 Shields, NW SW NE 33-5-8, abandoned late in 1925 in the Viola lime at total depth of 4810 feet. This is southwest of the old production.

With a fair sized campaign under way, production should show some increase over the balance of the year. The oil, around 36 gravity, is being run by the Sinclair Pipe Line Co. and the Oil State Refining Co., which has an 800-barrel skimming plant at Allen.

CHARLES G. BLACK, who on October 1 became president of the newly formed Standard Oil Co. of New Jersey, went to work for the old Standard Oil Co. in Cleveland in 1882, having been born in that city in 1868. This was only a summer job. He returned to school in the fall but obtained a permanent job with the company in 1883.

In January, 1899, he was transferred to the east as secretary to the superintendent of the Bayonne refinery and in the fall of that year was made assistant superintendent. In 1907 he was made superintendent of the Camden works, remaining there only a few months before he was called to the New York office to become general superintendent of the Bayway refinery.

He held this position until 1913 when he was appointed a member of the manufacturing committee and general manager of the refinery. In March, 1917, he was made chairman of the manufacturing committee of the Standard of New Jersey.

Holding the Resale Agent's Business Is Fast Getting No Easier

TERMS under which gasoline and oil dispensing equipment are put out by local marketing companies to reselling agents, are more vital to the marketer's financial success now than ever before.

The increasing number of retail outlets, with diminishing gallonage per outlet the marketer can figure upon, and the increasing margin being given the retailing agent, are causing the local oil marketing company to change its methods of putting dispensing and other equipment into dealers' hands.

There are various movements on foot to have codes of marketing ethics drawn which would regulate terms under which equipment is put into dealers' places of business, and to have the large oil companies agree to live up to these codes of practices as well as the local companies.

In the main, however, the manner in which the local marketer meets the competition of the large companies in this regard depends on the resourcefulness, backbone and merchandising ability of the individual company. To find how some companies were doing this, NATIONAL PETROLEUM NEWS had one of its staff writers interview a number of Independent marketers. His observations follow:

By
Ward K. Halbert

MOST local oil companies have figured carefully how they could handle equipment for each dealer in consideration of the number of gallons of business he controlled. With a constant margin of profits, a jobber with a marginal contract on gasoline could figure closely. But the trouble is that the margins of profit have not been constant the past few years.

An oil jobber of experience in a small Chicago suburb decided early last spring to go after dealer business. That was before the general collapse of the market structure and he placed faith in the Standard Oil Co.'s quantity discount schedule and arranged to sell on that basis, buying in the spot market.

"If a garageman is selling 100 gallons a day I can afford to put $300 worth of equipment in his place," the jobber said. "A dealer turning 3000 gallons a month is entitled to 3 cents a gallon under the regular Q.D.A., and here is what I can do:

"Gasoline costs me 6½ cents in Oklahoma. Freight and inspection makes the delivered cost 9 cents. (There was no tax in Illinois then.) The filling station price now is 16 cents a gallon. That leaves 7 cents to divide between me and the dealer. The Q.D.A. allows him 3 cents which leaves 4 cents for me.

"Four cents a gallon on 3,000 gallons means my return from that dealer's business is $120 a month. In a little more than three months I can charge off the $300 worth of equipment. And for $300 I can buy a $150 pump, a 1000-gallon tank worth about $65, pipe and fittings up to $20 and pay $50 for installation."

That jobber's figures were right and his guess at the market was correct, for gasoline costs him less now than it did then. But the Q.D.A. is not what it used to be—at least not in Chicago nor anywhere close around. The dealer doing 100 gallons a day is no longer satisfied with 3 cents a gallon. Many of them are getting 4 cents a gallon and some of them more. Dealers in the 150 and 200-gallon classes get a 5-cent spread and more than $300 worth of equipment if they approach the right person.

The oil man in question had the money to pay for his equipment. But if he had given a six-month note to a bank for it, hoping to charge it off in three months, he might have been in trouble because the expected 4-cent return to him has shrunk to 3 cents or less, and his entire wholesale operation has been coming out of that. He owns a lot of equipment, it is true, but that is a doubtful asset because it does not guarantee his keeping his customers.

If one of his dealers wants to change source of supply, this jobber can't prevent it even if he owns the pump and tank. It costs nearly as much to take the equipment out as it did to install it and if he sells the pump and tank to the dealer's new supplier he can't get much more than junk prices for it.

ASSUMING the role of the famous "Inquiring Reporter," a representative of NATIONAL PETROLEUM NEWS recently asked a half dozen oil jobbers in and around Chicago the same question, to wit:

"What do you do to hold your dealers, when large companies with well advertised brands of gasoline put in equipment, allow wider margins, give advertising helps that you can't afford, and maybe do things you don't know about?"

The answers were uniformly short and confidential. The jobbers did not want to be quoted directly, but here are the answers of five:

Sell them on the merchandise and not on the donations," said Jobber No. 1, who operates in a small town 30 miles from Chicago. "Some salesman comes to my best dealers every day and offers them a wider margin than I give, plus a truck load of equipment and advertising matter. But they don't get anywhere and here is why:

"My dealers own their tanks and pumps. They bought them and paid for them with real money (getting them at a discount with my help) several years ago. If they need a new pump they have the money to pay for it. They ask Mr. Salesman just one question and that's all.

"'Can you supply me with this same Dan Patch gasoline like I am selling now?' The salesman has to say 'No' and the conversation is finished. I know my town and its people. I do advertising for my dealers on posters and in newspapers to some extent. I always give my dealers a uniform product and met the Standard's Q.D.A. as it is published, and I treat them all alike.

"I have never met a bootlegger's price. I have never put my sign up in front of a dump. I like to see big company signs up at poor locations. I have lost seven customers in six years."

"SMALL operators have some advantages over large ones," said Jobber No. 2. He is 50 miles from Chicago in a small town. "We have to serve our dealers in ways that the large companies can not. I am a business man, able to make my own policies when I go to sell my gasoline to a dealer. I am bound by no rules and no orders from Chicago or New York.

"Most of my dealers are men of small capital. They sell other things besides gasoline and oil. They want to supplement their line so they can use all their time and space to advantage and what they need is credit. I help them buy things they need to handle in order to make more money. No large oil company can perform such service for a dealer. Their representatives are not allowed to do business that way.

"In the case of automobile accessories, I procured a sub-jobber's contract as a tire and accessorby distributor. I make a little money on it, but mostly I buy for my dealers and store for them. They are able to make a fair profit on their tires and accessories that way. They can buy from me in small quantities

just as cheaply as they could buy from a regular jobber in large shipments. They appreciate that, and if prices are equal they buy their oil and gasoline from me."

"WE ARE through with dealer customers until conditions change," said Jobber No. 3 who does business in a Chicago suburb. "We have never given away a single tank or a single pump for the preference of a gasoline customer. We remained in the gasoline business as long as it was profitable and now we are concentrating on the sale of motor oils and domestic fuel. We can't make any money giving a dealer as much as his business is worth.

"When a large and dignified organization like the Standard Oil Co. of Indiana lets a garageman who sells 150 gallons of gasoline a day, club it into giving him a 5-cent margin and a new suit of clothes, gasoline distribution is no game for me.

"We used to use selling effort on our dealers, persuading them that it was profitable to own their own tanks and pumps. We encouraged them to be Independent. We showed them that if they bought their own equipment they could buy from whomever they pleased and be under no obligations to anybody. That used to be true and it used to work out well. But now, a man is foolish to buy anything to go into the gasoline business if he has a fair location. If he will play one company against another he can get nearly anything he asks for."

"I AM OUT of the dealer business," said a jobber of metropolitan Chicago recently. "My trucks are running around the streets to serve my own stations and industrial accounts. Manufacturers and wholesale dealers in other lines of merchandise are easier to satisfy and sell at a profit than a man who buys gasoline to resell for several reasons:

"A dealer frankly prefers to sell Red Crown or Texaco or Shell or Sinclair gasoline to my comparatively unknown brand. He can do it easier. He may realize that I can supply him with an equally good product but that does not help him to sell a little known brand to the public. But when I sell a big consumer on the quality of my goods he is satisfied. Moreover he does not need signs and sales helps.

"Another point is that a manufacturer or wholesaler or a big department store does not worry so much about gasoline. It is a small part of their business. If they are satisfied with my goods and service they see no reason to change unless they get a much better price. The gift of a pump or a tank is nothing to them. Besides they appreciate their own steady customers and they try to be steady customers to firms they buy from. They despise the practice of shifting around every few weeks."

My system is to meet the prices and the favors of the big competitors as long as I can and when they offer my dealers more than I can give them I let the business go," said a suburban jobber. "I have a 4-cent marginal contract, guaranteed. That is, I give all my business to one refiner who sells me spot and assures me a 4-cent spread in times of distress. So I make sure I can make a little money inside of 4 cents.

"We figure every case that comes up on a basis of volume, and assume that we have 4 cents a gallon to do business on. If a reseller is exceptionally large, say 1,000 gallons a day, and the big companies offer him 5½ cents under the filling station price or 3½ cents under the tank wagon price, we meet the offer to keep the customer provided we don't have to give him much equipment. We can make a little money on such a customer right now and if the margin gets down to 4 cents we will not actually run in the hole.

"One of our competitors, a refiner-distributor is giving farmers a one-gallon pump and a 280-gallon tank that cost at least $50 and $5 to install, in return for their business. If it is used for kerosene in the plowing season and for gasoline at other times, the equipment has to be paid for in four years any way, by normal depreciation. Farmers get 2 cents off the retail price, buying from tank wagons. That leaves 2 cents a gallon to consider in calculating return from such business. At 2 cents a gallon it would take 2750 gallons of business to pay for the equipment. It will take a big farmer to use that much in four years. That is the kind of gallonage they are welcome to. I do not want it that way."

Texas Official Killed In Auto Accident

CLEVELAND, Oct. 31.—John J. Mitchell, an associate of John W. Gates in the founding of The Texas Co. and one of the company's directors, was killed in an automobile accident Oct. 29 near Chicago. Mrs. Mitchell was also killed. Their car skidded and overturned in a ditch when their chauffeur tried to avoid two other cars that were in collision on a hillside.

Mr. Mitchell was chairman of the Illinois Merchants' Trust Co. and director in many large corporations and banks in New York as well as Chicago. For many years he was a spokesman for The Texas Co. on financial matters.

Yates Field Recycling Of Gas Proposed

HOUSTON, Oct. 27.—Yates field operators are considering a suggestion of W. A. Moncrief, of Fort Worth, chairman of the Pecos county prorating committee, which calls for the recycling into the pay horizon of natural gas produced with the oil in "high" wells. Although hydrostatic water pressure is recognized as responsible for the "gusher" characteristics of Yates field wells, some of the completions near the crest of the structure have tested as much as 10,000,000 cubic feet of gas daily.

Petroleum engineers of companies interested in development of the field are making a survey of oil-gas ratios and back pressures, according to Mr. Moncrief, with the idea of presenting concrete data on which to act.

It has been suggested that inasmuch as the gas yields commercial quantities of raw natural gasoline, some one of the operating interests in the field might be willing to install a casinghead plant for its recovery; the stripped gas to be utilized for reintroduction into the pay horizon. This could be done, Mr. Moncrief suggests, either as a co-operative operation, or otherwise, in either event, he believes, such a recycling of gas would be of operating benefit.

California Refineries Break Record

LOS ANGELES, Oct. 29.—During the month of September, California refineries broke all previous records for gasoline output, total production being 5,149,639 barrels, according to report released by the San Francisco office of the bureau of mines. During that period, 131,175 barrels of gasoline were drawn from storage. This gives an indicated consumption of 3,138,646 barrels for the month, or a daily average of 104,602 barrels, within the natural Pacific coast trade territory.

During the month 51 refineries with an indicated daily capacity of 812,800 barrels, operated at 73.07 per cent capacity with daily average crude runs to stills of 593,896 barrels. In August the same number of refineries operated at 72.43 per cent capacity, thus running to stills less crude. Twenty-nine plants in the state were shut down.

A total of 3,563,781 barrels of fuel oil were exported, showing an increase of 867,475 barrels over same month last year.

A total of 622,458 barrels of natural gasoline was blended at California refineries in September, and during same period the natural gasoline plants manufactured 33,432 barrels of finished gasoline, which was the greatest output of gasoline by these plants for any month.

Jobbers, Western Refiners, Hesitate On 1928 Contract Requirements

Staff Special
TULSA, Nov. 1

PRESENT indications are that less gasoline will be sold on contract by refiners in the Mid-Continent field in 1928 than during the past year. Manufacturers and wholesalers in the Mid-Continent's principal marketing territory appear to be having greater difficulty in coming to an agreement on terms than was the case a year ago or in the early winter of 1925.

Although the season for making contracts is well advanced it would be hazardous to make a positive prediction that contracts will be fewer or smaller. There are still two months before the first of the year and in even that short a period the ideas of either refiners or jobbers may change materially.

The difficulty in reaching a satisfactory basis on contracts appears to spring chiefly from the fact that jobbers are insisting on more liberal terms than they had in 1927 while refiners are unwilling to make the required concessions. The modifications sought by jobbers embrace principally a guaranteed margin in their local territory without reference to general advances or declines in the tank wagon market through the entire marketing territory.

No fundamentally new contracts have been brought forward for consideration this fall by either refiners or jobbers. Thus far it appears likely that most of the contracts for 1928 again will be based on the spot market on date of shipment or some average spot price over an agreed period such as a week or a month. There will be a few out and out tank wagon marginal contracts in favored areas where refiners have done business satisfactorily for a number of years.

Earlier in the year there was some discussion in refining circles of bringing out a new type of contract which would include the price of crude oil as one determining factor. Lately this discussion has died out without any contracts having been written as far as can be learned. With spot gasoline markets as low as they are at the present time it appears impossible for refiners to get far away from the going spot market on their contracts.

When the market date of shipment contract first began to take hold in the middle west following the complete break-down of the old marginal contracts, the agreements generally did not offer the jobber much protection against high gasoline markets at a time when tank wagon markets might be depressed. A year ago, however, jobbers began to demand a minimum margin under the tank wagon schedule.

> "The persistent rumor that the Standard Oil Co. of Indiana might abandon its tank wagon price and make it the same as the service station with certain discounts for resale dealers has caused at least one large refining organization to make a new provision in its contract. The Mid-Continent Petroleum Corp. has changed its contracts by inserting a clause which gives either party the right to cancel within 30 days in case the Indiana company should make any fundamental change in its marketing methods."

In the old days of marginal contracts a number of refiners had sad experiences with certain contracts where they based margins on tank wagon schedules at individual points. As a result the margins were based on general advances or declines in the entire territory and this policy generally was carried over to the market date of shipment contracts where protection was a factor.

AS USUAL in times of overproduction and low refinery markets there have been numerous low tank wagon prices in the Mid-Continent's marketing territory during the past season. Jobbers at these points have been hurt badly and are the most insistent now in demanding some local protection as well as a guaranteed margin based on the general tank wagon level. Jobbers operating in points where there have been no disastrous price wars also are asking local protection on the theory that they might find themselves in a pinch.

Current gossip here is that the Roxana Petroleum Corp. has been willing to grant partial local protection in its contracts. It is stated that the Roxana has been allowing jobbers half of any local declines below the general tank wagon level. For example on a 4-cent guarantee if the margin should be cut to 2 cents at one point with the general level unchanged the Roxana contract would allow a 3-cent margin.

Generally speaking Oklahoma refiners are holding out strongly against any local protection. They are willing in most instances to grant a 3½-cent or 4-cent margin based on the entire territory. Of course there have been some exceptions to this rule.

The persistent rumor that the Standard Oil Co. of Indiana might abandon its tank wagon prices and make it the same at the service station with certain discounts for resale dealers has caused at least one large refining organization to make a new provision in its contracts. The Mid-Continent Petroleum Corp. has changed its contracts by inserting a clause which gives either party the right to cancel within 30 days in case the Indiana company should make any fundamental change in its marketing methods. This company has based its marginal guarantees to jobbers for several years on the service station market rather than the tank wagon.

THERE has been a marked tendency on the part of some of the smaller refiners to refuse to make any extensive contracts for next year. Some executives have come to the conclusion that the spot market would be in a more healthy condition if more trading were going on in it every day. They have come to the conclusion that they have allowed others to fix the price at which they have been selling their gasoline by not taking a larger part in the market. The largest refining companies are still seeking contracts in order to be assured of a steady outlet for a substantial part of their production.

It is reported that some jobbers who have refused to contract for next year have come to the conclusion that they will shop around next year and buy at the cheapest price in the market rather than pay the average of published quotations based on the bulk of the gasoline sold. They have come to the conclusion that there is always some gasoline selling below the general average and that it will be to their best interest to buy this rather than tie up with a steady source of supply even though the refiner might offer some protection in a marginal way.

Beck Is Promoted

TULSA, Oct. 31.—O. Beck, formerly superintendent of the North American Car Co.'s plant at Coffeyville, Kan., has been appointed sales manager of the steel plate and construction division of the company. He will maintain his headquarters at Tulsa in the future. B. Williamson of the Coffeyville plant, has succeeded Mr. Beck as superintendent. His assistant will be W. R. Kelly, formerly master car builder for the Lion Oil & Refining Co. of El Dorado, Ark.

New West Texas Field in Howard County Opened by Magnolia

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, Oct. 27

HOWARD county's first commercial well in the deep lime pay this week divided attention with the Hendricks field's greatest completion, which is estimated good for 20,000 barrels daily, open flow production. Both are in the Permian age salt basin area of west Texas, in fields about 95 miles apart.

The Howard county well, drilled by Magnolia Petroleum Co., in the southeast of the southwest of W&NW sec. 136, on the Dora Roberts ranch, was turned into the Colo-Tex Refining Co's. field pipeline, making 47 barrels an hour, pinched flow, or roundly 1,200 barrels daily. Pay was found at 2956-2990 feet in comparison with earlier small production at shallow sand levels (1400-1600 feet) in the Chalk field area, immediately east and northeast.

Magnolia's new Dora Roberts well produces from a horizon found several hundred feet below sea level and probably from an oölitic lime similar to the pay in the Big Lake field, upwards of 60 miles South.

Although the first commercial deep line completion in the county, the Roberts well yields to an earlier test of the Marland Oil Co., et al., on the Harding land, in Texas & Pacific block 33, sec. 19, the honor of first picking up a similar pay in Howard county. The Harding test, five and a half miles northwest of the Dora Roberts, made about 15 barrels daily in a lime pay definitely established to be oölitic at 3173-3230 feet, elevation 2502 feet.

Principal owners of acreage in the area adjacent to the Dora Roberts well are the Magnolia, F. H. E. Oil Co., the California Co., Marland Oil Co. of Texas and scattered individual operators. The Settles block of the Marland interests, which has been under 50-50 development at shallow levels by the Texan-Group 1 interests, is within a mile to the southwest of the Magnolia discovery. The Settles block comprises several thousand acres and straddles the Howard-Glasscock county boundary.

IN THE Hendricks field, Winkler county, the previously reported Cranfill & Reynolds well, in sec. 28, block B-5, had increased its yield from 500 barrels an hour, initial production, to 10,900 barrels in 17 hours, with the gate valve reduced three turns. Total depth of the Cranfill & Reynolds well, as reported in NATIONAL PETROLEUM NEWS last week, is 2883 feet.

The Cranfill & Reynolds well is one of a group of 23 tests described on page 19 of the Oct. 12, 1927, issue of this periodical as potentially capable of 65,000 to 70,000 barrels new initial production if all wells with casing set in, or on top of, the lime were to be completed immediately. At the time the Cranfill & Reynolds completion was made the production of the field was pinched to less than 50 per cent of its present flowing capabilities, which exceeded 20,000 barrels daily from less than a dozen wells.

With the exception of shallow wells in the Yates field, Pecos county, where hourly gauges are the only test of open flow capabilities, the Cranfill & Reynolds completion is the largest ever to have been made in the west Texas salt basin area. As previously pointed out in these columns, the Yates and Hendricks fields have in common a similarity of high porosity in the lime pay.

Whether the Hendricks field production is backed up by hydrostatic water pressure down dip of the structure, as found to be the case in the Yates area, is yet to be definitely established. Such a condition, however, is suspected to exist.

IN EITHER event, pressure in the Hendricks field is dissimilar to that in the Yates area to the extent that heavy gas accompanies the oil in the upper part of the structure. No wells in the Yates field measure more than 15,000,000 cubic feet of gas daily as compared with the Humble Oil & Refining Co.'s No. 2 Hendricks, sec. 34, Winkler area, making 104,000,000 cubic feet of gas daily at 2825 feet.

Individual tests of the Roxana-Landreth interests in the south part of sec. 29, block B-5, Hendricks area, have indicated that Winkler county development may prove "spotted," but wells like that of Cranfill & Reynolds will offset discouraging results from the general viewpoint.

An east offset to the Southern Crude Oil Purchasing Co.'s big well in sec. 4, block B-12, had not found the oil pay at a level 115 feet deeper in the lime than the earlier completion. The producing well in sec. 4, which is the southernmost in the Hendricks field, has been making in excess of 5000 barrels daily since its completion, Sept. 5, last.

Until the Cranfill & Reynolds completion was made the sec. 4 well of Southern Crude was the only one in the field allowed to produce at capacity, others being pinched. It is reported from west Texas that the American Petroleum Co., which operates gathering lines in the field for tank car shipments via the Texas & Pacific railroad to the Gulf Coast, will take all the Cranfill & Reynolds well is allowed to produce.

Except for the American's facilities the only present outlet for Hendricks field oil is through lines of Southern Crude Oil Purchasing Co., to the Texas & Pacific railroad, near the new town of Wickett. Southern Crude has been running oil for itself, the Gulf, Pure and Independent companies.

Roxana, which recently bought a half interest in the Winkler county properties of Landreth Production Co., is now considering construction in the Hendricks area of the first concrete storage tank in west Texas. An engineer from the Shell Co. of California, which is a companion subsidiary of the Shell-Union Oil Corp., has been "borrowed" for the purpose of making a survey, on which will depend the Roxana's decision.

Advices from west Texas indicate that a favorable report would be followed by immediate construction of a 3,000,000 barrel reservoir of the general type used by many operating companies in California.

Magnolia Petroleum Co. which is building a trunk pipeline east from its Midland concentration base for west Texas crude, is reported planning a 6-inch or 8-inch feeder system from the Hendricks field to Midland.

Its 8-inch trunk line now being constructed from Midland to the Ranger territory will handle crude produced in the University (Church & Fields) pool of Crane county; also it will serve the Chalk area of Howard county, through which the right-of-way goes. The Iatan field, owned by Magnolia in western Mitchell county, will be served with feeder lines as required.

THE Iatan and Westbrook fields of Mitchell county, although producing at drilling depths approximating the level at which "gusher" pay was found in the Dora Roberts well, Howard county, probably yield their oil from a deeper stratigraphic

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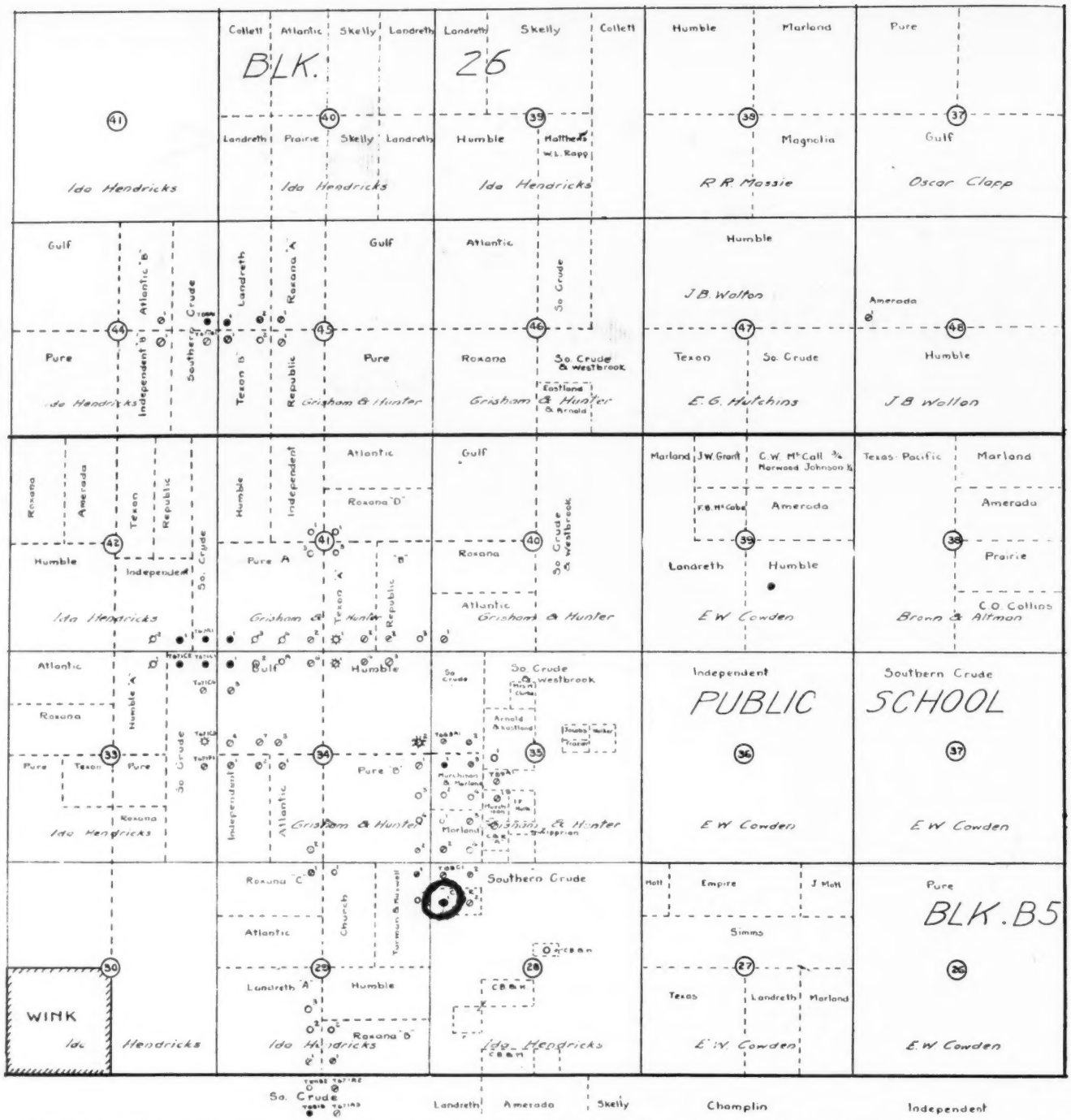


Map showing Hendricks ranch area of Winkler county, Texas, development. Cranfill & Reynolds 20,000-barrel well is in northwestern part of sec. 28, block B-5

horizon. Thus, the Magnolia's Howard county discovery probably marks the first oölitic lime oil found in the north-northeast trend of the Permian salt basin, along its eastern flank and north of the Big Lake field, Reagan county. Other fields in, or on the rim of, the west Texas salt basin have followed its flanks or trends through the basin itself from the Big Lake region in the general direction of the Texas-New Mexico boundary.

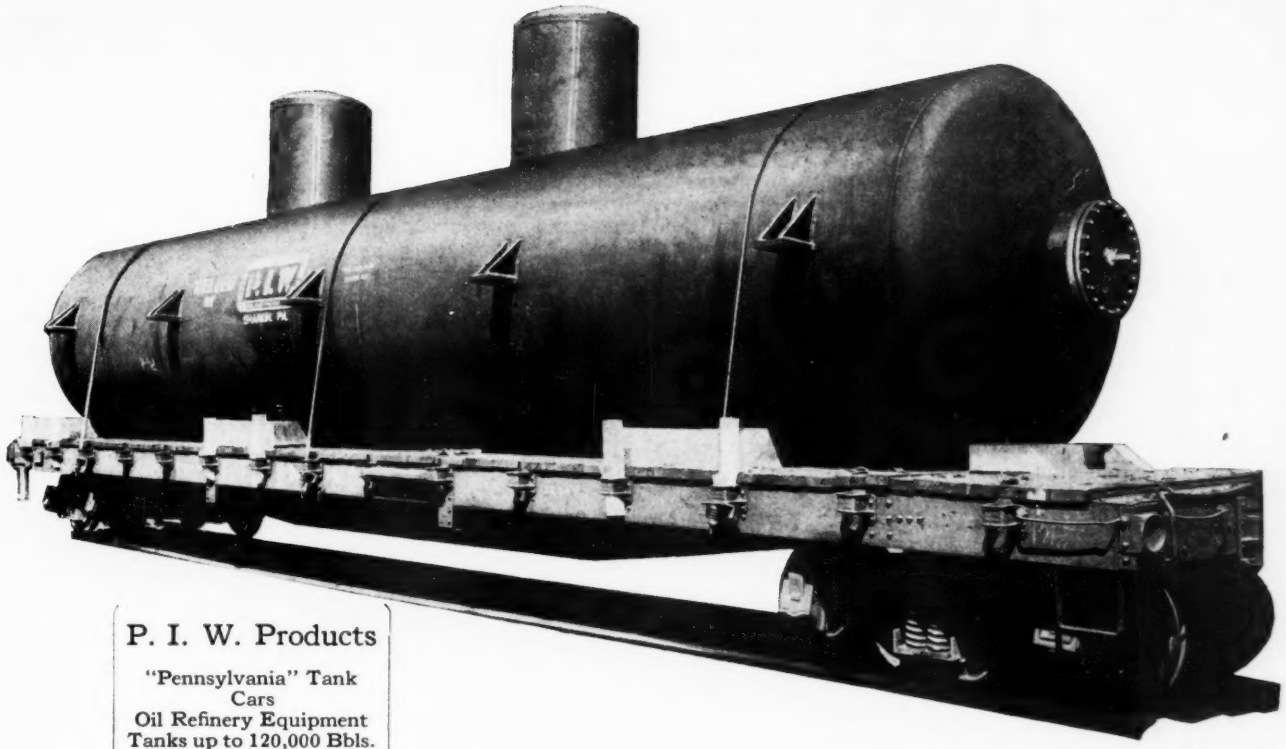
As frequently pointed out in these columns over a period of about two years, the big fields of west Texas (with the exception of the Yates development, in Pecos county) have given up their yields from Permian lime horizons found at below-sea-level depths out in the basin; and fields of lesser productive importance have been found at above-sea-level depths along the rim of the basin. Structural "highs" or blisters in the lime provide vehicles for accumulation in a general area that for years was discounted for oil possibilities because of its broad synclinal character.

A map printed on page 20 of the Sept. 20, 1927 issue of this periodical shows the relative position of west Texas fields with reference to the location of each. It will also serve as a guide to the general area on the eastern side of the Permian age salt basin as now proved for future development by the Magnolia's Howard county discovery.

Nebraska Jobbers Meet in December

LINCOLN, Neb., Oct. 31.—The annual convention of Nebraska Independent Oil Men's Association will be held at the Hotel Fontenelle, Omaha, on Dec. 14 and 15.

SOUTH BEND, Ind.—H. B. Moore, who has been agent here for the Sinclair Refining Co., has been transferred to the Indianapolis division. Mr. Millard will have charge of the South Bend office. R. J. Masters will be Mr. Millard's assistant.



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Greater Care in Drilling Gas Wells Held Necessary on Gulf Coast

HOUSTON, Oct. 31

MORE conservative drilling, together with careful and studied completions of wells, constitutes the most serious problem of the South Texas natural gas industry, Frank W. Kirk of the Houston Pipeline Co., told the southwest division, natural gas department, of the American Gas Association at the opening day's session of its fall meeting in Houston.

This is necessitated, according to the speaker, by the general geologic formations in which the greatest volume of gas in the South Texas territory is found. For his purposes, Mr. Kirk described South Texas territory as that part of the state adjacent to the Gulf of Mexico, following the curvature of the gulf from the Louisiana line to the Mexican boundary and extending approximately 125 miles inland.

As a general rule, he described the gas in this area as found in a very fine sand and in many instances coming from beds of volcanic ash and sandy shales. These sandy shales drill very similar to shale and oftentimes are passed through by drillers inexperienced in this area. He said they were often logged as shale, or shale and boulders, as little or no gas show is visible on the settling ditch or in the pit.

A common occurrence as a result of this, he described as a wild well blowing in from an unknown sand on account of letting the drilling mud get thin.

"For safety," said Mr. Kirk "a well should have plenty of surface casing set and thoroughly cemented. A drilling gate and blowout preventer with one of the small ports connected up so mud can be pumped or run into the well as the drill stem is removed is also standard use among experienced operators.

"A large reserve pit and a supply of oxide or barites for increasing the specific gravity of the mud stacked near the rig tends to eliminate, or at least greatly reduce, the danger of uncontrolled gas wells which in the coastal sediments rapidly crater and cause irreparable damage."

Perhaps the two greatest problems from a production standpoint which the gas producer must work out as rapidly as possible were described as:

First, the amount of gas to be taken from each well daily.

Second, the lifting of the salt water from the producing sands—thus keeping the gas dry and the well pressure up to the true sand pressure of the field.

The Railroad Commission allows 50 per cent volume withdrawal based on the open flow test. "This" says Mr. Kirk, "is practically the same as no rule at all.

"In the first place it is inadvisable to make open flow tests of the wells. The fine sand which comes through the smallest screen rapidly cuts out the screen and the gate valves on the Christmas-tree, endangering the well and the field as a whole. In the second place, I know of no gas well in this area which will put anything like 50 per cent of its open flow into a pipe line without cutting the screen out and sanding up, or immediately bringing in water. To prevent this requires the individual study of each well. The drop in pressure of each well must be watched carefully and its withdrawal regulated.

"RECENTLY the Houston Oil Company of Texas has been running 2-inch tubing in the wells as soon as the liner is set. This tubing leaves the well through a control head and the well is allowed to clean itself through this tubing, which is choked down by a beam. This is really the same as bailing a well from the bottom up, as it lifts the heavy mud from the liner by a strong suction action created at the base of the tubing or gas lift. The well having been cleaned thoroughly it is then tied onto the pipe line from the casing port of the control head. A bean here regulates the amount of gas flowing into the line.

"The size of choke and therefore the amount of gas to be taken from the well is arrived at by experiment. A two-pen recording gauge mounted on each well, with one pen arm recording the pressure on the tubing and the other the back pressure on the casing head, gives a graphic chart of the capacity of the sand. As long as the pressure on the tubing is constant and shows no surging the well is operating efficiently. As soon as this arm gets erratic and leaves a wavy chart line the well is being pulled too rapidly and the sand is heading, therefore causing heaving, water troubles, etc. In most instances the gauges will operate steady and the well will put out its maximum on a ratio of 1 to 2."

In various of the South Texas fields some of the wells producing the greatest amount of gas, have been completely lost, together with equipment over the wells, by drilling practices Mr. Kirk describes as improper, careless and hurry up methods; great craters have been formed around the well, depleting the entire producing area and permitting the escape of enormous volumes of gas, which continue to blow into the air until the natural pressure has been reduced to a point where mud and water can penetrate the gas producing formation sufficiently to seal off the gas flow.

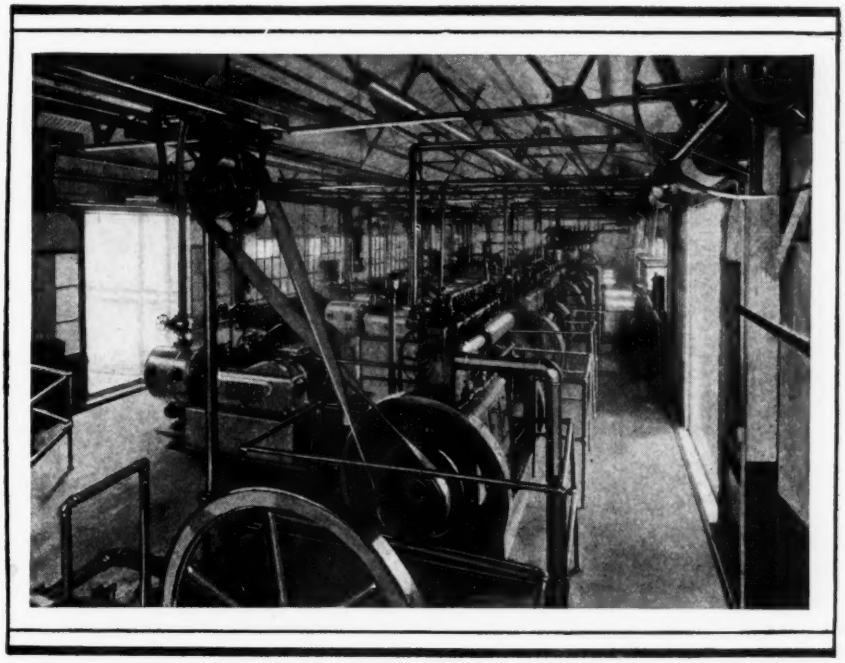
"This condition," he said, "is generally caused by either drilling into an unknown and unexpected gas sand at a time when the operator is not prepared for the well to come in, or by neglecting to keep the mud in the hole sufficiently heavy to overcome the rock pressure, or by improper setting and cementing of the casing; and at other times by neglecting to have proper mechanical appliances on hand and in condition to take care of a heavy gas flow when encountered. Another item mentioned in connection with the gas supply is that of over drilling the prolific fields. This, according to Mr. Kirk, can have but one result, early depletion of the fields nearest and most available to the consumer and will eventually react by increased costs of production, increased investments in transportation lines with necessarily increased cost to the consumer.

"The third problem, that of transportation," he said, "comes between the supply and the market and requires the investment of great sums of money. This is made necessary by the geographic location of the present known fields of South Texas, which are generally at remote points far from the larger cities and the greater markets.

ANOTHER problem of transportation, he described as unusually rapid corrosion of underground pipe lines, particularly where construction is necessary through salt water swamps. In one instance, the Houston Pipe Line Company, in order to avoid corrosion, built several thousand feet of 16-inch high pressure line on trestles constructed of driven piling across sulphur impregnated swamp land. This unusual expense, in Mr. Kirk's opinion, has proven itself justified by the results.

"I do not think, he said "that any of the pipe line companies in this territory, both oil and gas, have until recently realized the extent of the serious losses entailed from this cause; there is still not enough consideration given to it."

Power-Plus



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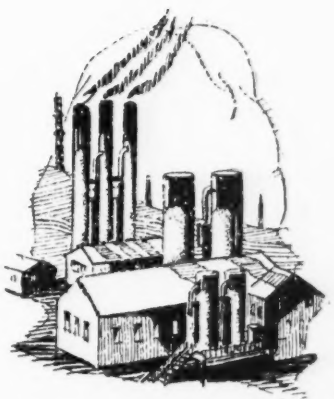

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Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended October 28 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended Oct. 28	Total Week Ended Sept. 30
Plants Reporting	12	28	27	12	79	124
Crude Capacity (bbls.)	92,000	157,300	104,500	54,900	408,700	470,100
Cracking Capacity	30,700	52,600	16,200	22,700	122,200	110,750
Da. Av. Crude Runs	54,055 — 1.6	110,591 — 0.8	58,880 — 9.8	42,125 + 10.1	265,651 — 1.6	270,393
Da. Av. Other Oils	8,593 + 72.1	1,493 + 9.5	5,327 + 14.4	1,739 — 24.7	17,152 + 28.7	18,113
GASOLINE—Gallons						
Stocks, Oct. 22	6,258,000	34,318,000	18,264,000	4,970,000	*63,810,000	54,778,000
Prod. 10-22 to 10-29	9,087,000 + 12.6	17,600,000 — 2.8	6,553,000 — 13.8	3,964,000 + 8.6	37,204,000 — 0.6	37,368,000
Ship. 10-22 to 10-29	8,210,000 — 0.4	18,619,000 + 12.0	6,708,000 — 11.9	3,935,000 + 11.7	37,472,000 + 4.1	35,109,000
Stocks, Oct. 29	7,135,000 + 14.0	33,299,000 — 3.0	18,109,000 — 0.8	4,999,000 + 0.6	63,542,000 — 0.4	57,037,000
Ratio Sales to Prod.	90.3%	105.8%	102.4 %	99.3%	100.7%	94.0%
KEROSENE—Gallons						
Stocks, Oct. 22	3,289,000	6,086,000	1,302,000	652,000	11,329,000	9,892,000
Prod. 10-22 to 10-29	1,580,000 + 12.9	3,002,000 — 7.4	1,244,000 — 5.8	480,000 + 6.0	6,306,000 — 1.7	6,356,000
Ship. 10-22 to 10-29	1,397,000 — 14.5	2,882,000 — 1.3	1,552,000 — 8.7	564,000 + 80.2	6,395,000 — 2.6	6,202,000
Stocks, Oct. 29	3,472,000 + 5.6	6,206,000 + 2.0	994,000 — 23.7	568,000 — 12.9	11,240,000 — 0.8	10,046,000
Ratio Sales to Prod.	88.4%	96.0%	124.8%	117.5%	101.4%	97.6%
STOVE DISTILLATE—Gallons						
Stocks, Oct. 22	4,622,000	7,286,000	2,078,000	9,000	13,995,000	14,387,000
Prod. 10-22 to 10-29	538,000 + 13.5	622,000 + 7.6	319,000 + 2.6	65,000 + 4.8	1,544,000 + 8.4	1,775,000
Ship. 10-22 to 10-29	202,000 — 48.7	463,000 +198.7	244,000 + 19.6	68,000 — 13.9	977,000 + 17.4	1,901,000
Stocks, Oct. 29	4,958,000 + 7.3	7,445,000 + 2.2	2,153,000 + 3.6	6,000 — 33.3	14,562,000 + 4.1	14,261,000
Ratio Sales to Prod.	37.5%	74.4%	76.5%	104.6%	63.3%	107.1%
GAS OIL—Gallons						
Stocks, Oct. 22	8,473,000	40,163,000	17,467,000	8,735,000	74,838,000	76,068,000
Prod. 10-22 to 10-29	1,499,000 + 12.1	2,036,000 + 49.5	1,213,000 + 4.2	1,770,000 — 7.5	6,518,000 + 12.8	6,511,000
Ship. 10-22 to 10-29	1,133,000 + 29.5	2,074,000 — 6.3	1,012,000 + 37.9	2,092,000 + 46.2	6,311,000 + 20.1	7,960,000
Stocks, Oct. 29	8,839,000 + 4.3	40,125,000 — 0.1	17,668,000 + 1.2	8,413,000 — 3.7	75,045,000 + 0.3	74,619,000
Ratio Sales to Prod.	75.6%	101.9%	83.4%	118.2%	96.8%	122.3%
FUEL OIL—Gallons						
Stocks, Oct. 22	15,203,000	47,024,000	33,205,000	*10,688,000	*106,120,000	103,934,000
Prod. 10-22 to 10-29	5,322,000 — 7.0	7,640,000 — 2.9	7,573,000 — 10.4	5,816,000 + 5.5	26,351,000 — 4.4	25,882,000
Ship. 10-22 to 10-29	5,526,000 — 1.5	7,963,000 + 26.7	9,077,000 + 5.6	6,188,000 + 4.6	28,754,000 + 8.9	24,667,000
Stocks, Oct. 29	14,999,000 — 1.3	46,701,000 — 0.7	31,701,000 — 4.5	10,316,000 — 3.5	103,717,000 — 2.3	105,149,000
Ratio Sales to Prod.	103.8%	104.2%	119.9%	106.4%	109.1%	95.3%

*Revised due to addition of one reporting plant.

Gasoline Produced by Various Methods, Week Ended October 28

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	5,546,000	61.0	13,367,000	76.0	5,600,000	85.5	1,247,000	31.5	25,760,000	69.2
Cracked	2,885,000	31.8	2,998,000	17.0	637,000	9.7	2,106,000	53.1	8,626,000	23.2
Natural	656,000	7.2	1,235,000	7.0	316,000	4.8	611,000	15.4	2,818,000	7.6
Total	9,087,000		17,600,000		6,553,000		3,964,000		37,204,000	

+ or — columns are changes over previous week.

Gasoline, Kerosene and Fuel Stocks Lowered

Staff Special—By Telegraph
TULSA, Nov. 1

SHIPMENTS of gasoline from Mid-Continent refineries that have 60 per cent of the active operating capacity of the field, in the week ended Oct. 28 increased for the second consecutive week. Excellent weather throughout the Mid-Continent's marketing territory brought shipments to 37,472,000 gallons, an increase of 1,472,000 gallons over the preceding week's shipments and an increase of 6,370,000 gallons over the week ended Oct. 14.

Refiners in Oklahoma and Texas reduced their stocks of gasoline. North Louisiana and Arkansas refiners increased stocks only 29,000 gallons. Kansas refiners increased their stocks 877,000 gallons. Stocks at all reporting plants were reduced 270,000 gallons to 63,542,000 gallons.

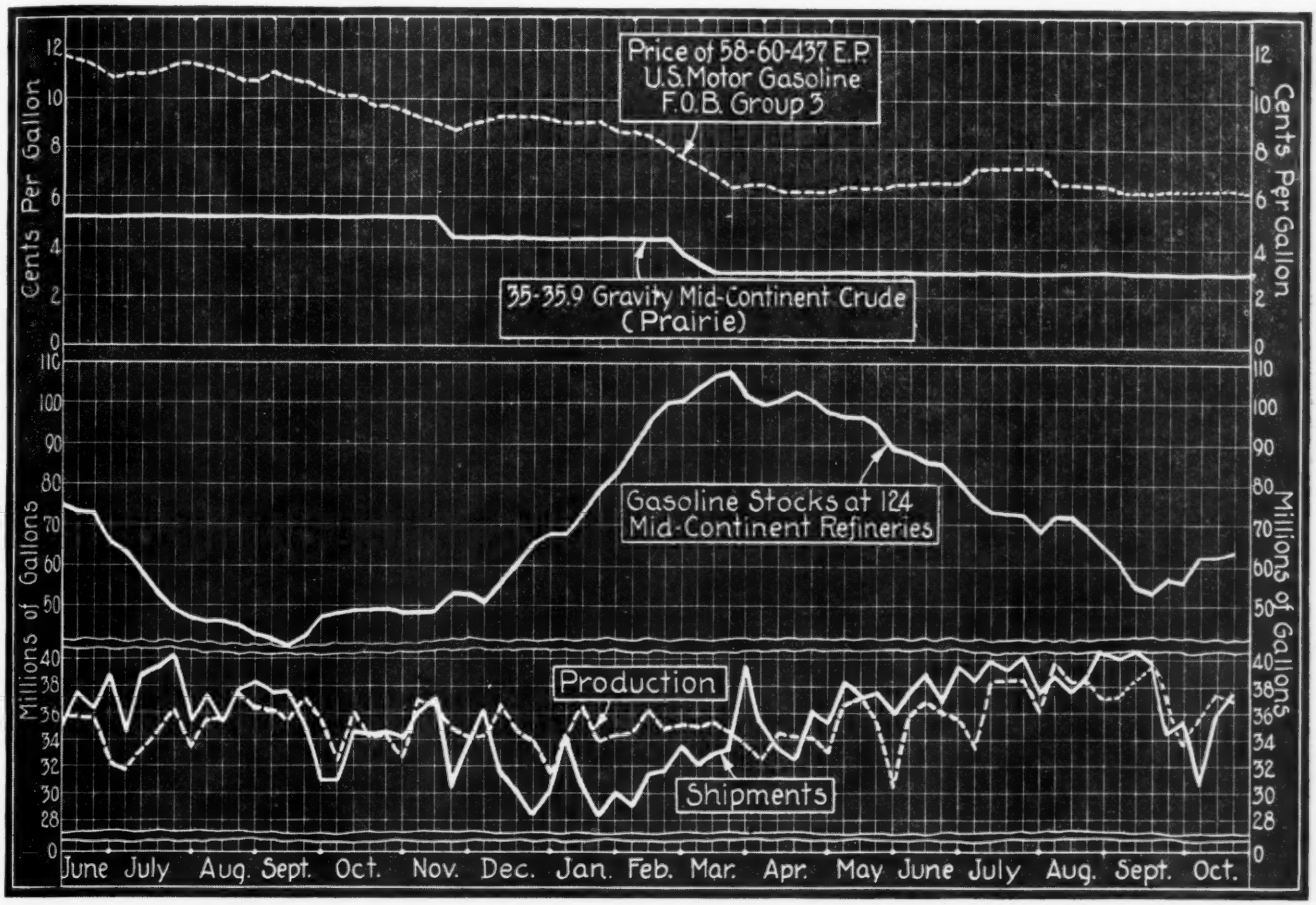
Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Oct. 28. Change in stocks figured from Sept. 30.

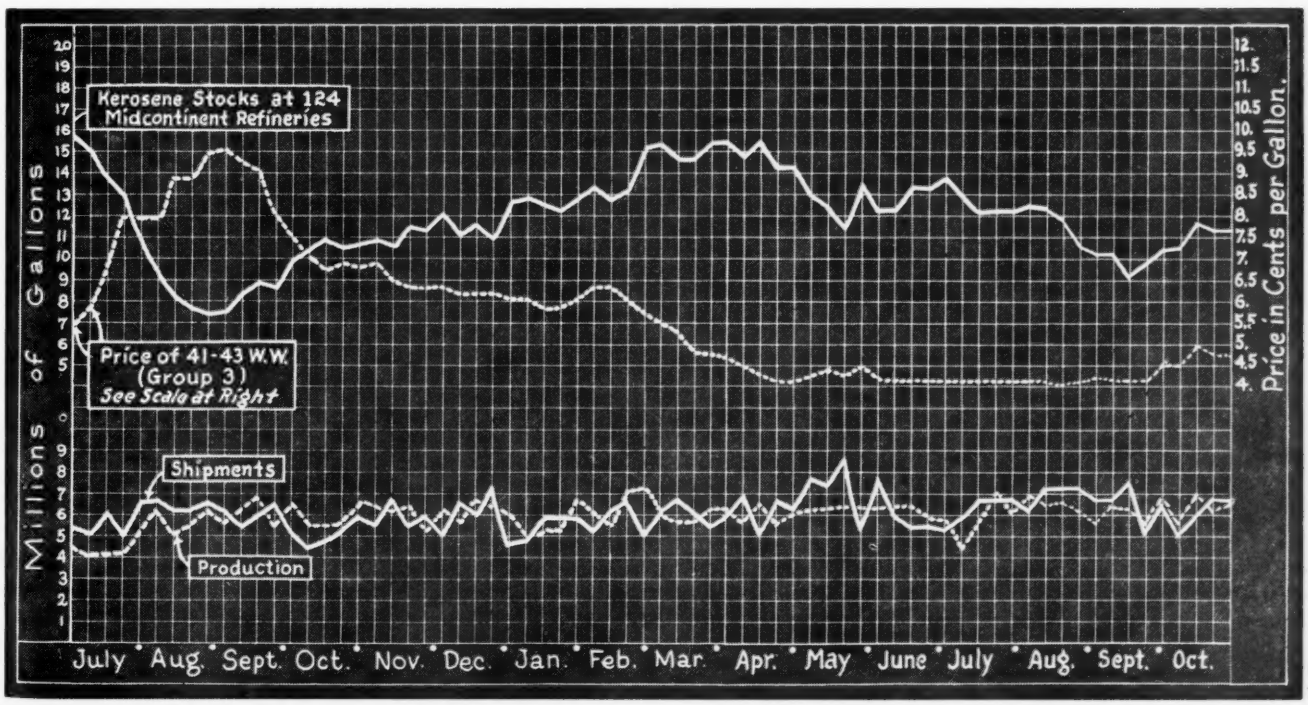
	Gallons
GASOLINE	
Production	143,838,000
Shipments	137,333,000
Net change in stocks	+6,505,000
Ratio sales to production	95.5%
KEROSENE	
Production	24,829,000
Shipments	23,635,000
Net change in stocks	+1,194,000
Ratio sales to production	95.2%
STOVE DISTILLATE	
Production	6,355,000
Shipments	6,054,000
Net change in stocks	+301,000
Ratio sales to production	95.3%
GAS OIL	
Production	25,165,000
Shipments	24,739,000
Net change in stocks	+426,000
Ratio sales to production	98.3%
FUEL OIL	
Production	106,223,000
Shipments	107,655,000
Net change in stocks	—1,432,000
Ratio sales to production	101.3%

Barometer of Mid-Continent Refinery Market—Week Ending October 28

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 124 Plants to National Petroleum News

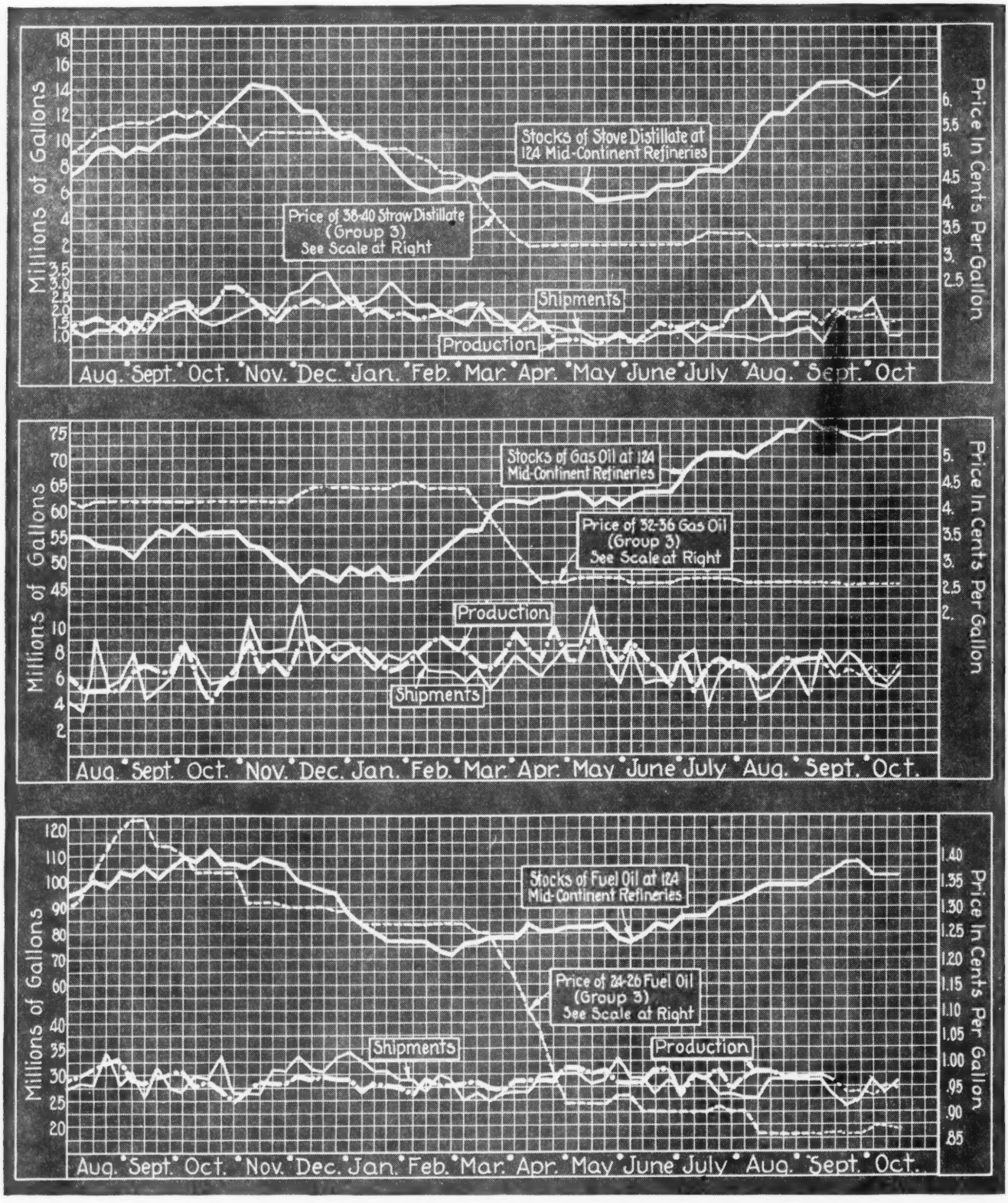

Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at 124 Mid-Continent Refineries
Millions of Gallons
Production
Shipments
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct.

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date shown in table on opposite page


Kerosene Stocks at 124 Midcontinent Refineries
Price of 41-43 W.W. (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price in Cents per Gallon.
July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct.

Barometer of Mid-Continent Refinery Market—Week Ending October 28

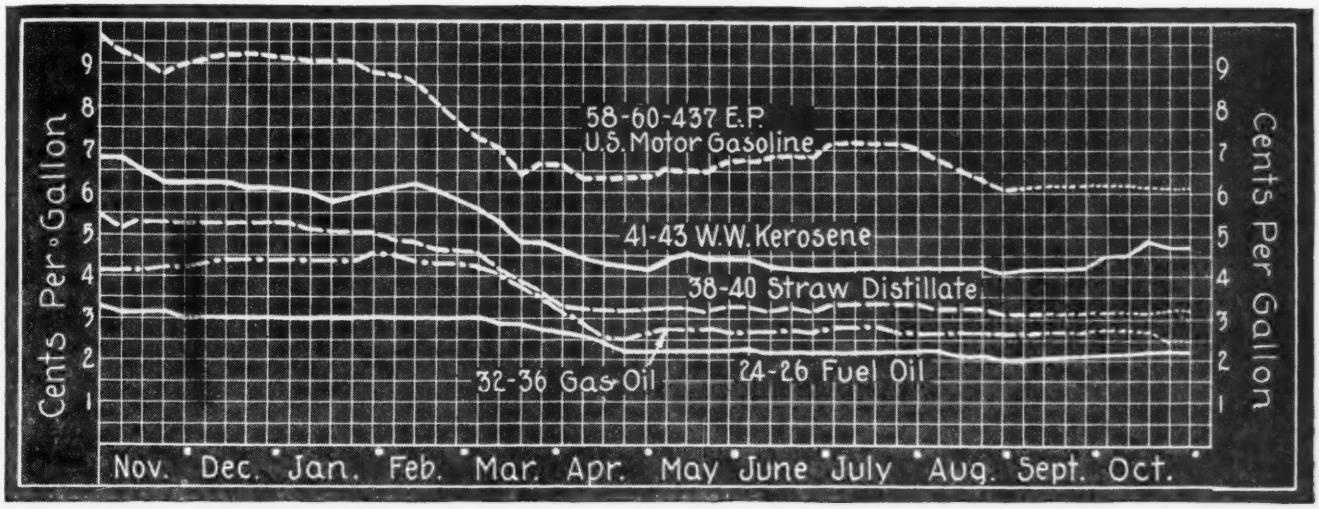
Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 124 Plants to National Petroleum News


Millions of Gallons
Price In Cents Per Gallon
Stocks of Stove Distillate at 124 Mid-Continent Refineries
Price of 36-40 Straw Distillate (Group 3) See Scale at Right
Shipments
Production
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct
Millions of Gallons
Price In Cents Per Gallon
Stocks of Gas Oil at 124 Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct.
Millions of Gallons
Price In Cents Per Gallon
Stocks of Fuel Oil at 124 Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Shipments
Production
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct.

At the rate of shipment stocks represented a little less than 12 days' supply.

Crude runs averaged 265,651 barrels daily, compared with 269,925 barrels a day in the preceding week. Charges to stills of partly refined oils averaged 17,152 barrels as compared with 13,323 barrels a day the week before. In the four October weeks reporting refiners ran an average of 265,000 barrels of crude a day, compared with 281,000 barrels a day in September. The decrease of 16,000 barrels in daily average still charges enabled the group to keep gasoline stocks from increasing materially at a season when stocks normally begin to build up. Shipments of gasoline in the last four weeks averaged 34,800,000 gallons a

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
Cents Per Gallon
58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct.

Prices shown above are on Group 3 basis and extended to date shown in Refinery Market Tables in Market Section of this Issue

week, compared with 40,800,000 gallons a week in September.

In the accompanying table revisions have been made in the number of plants and capacity covered by the report. All plants formerly covered by the report which have not operated during the last two years or which appear to be closed permanently, have been eliminated. The report now shows 12 plants in Kansas with a crude capacity of 92,000 barrels and a cracking capacity of 54.055 barrels a day. The Oklahoma list includes 28 plants with a crude capacity of 157,200 barrels and a cracking capacity of 52,600 barrels a day.

Shipments of kerosene continued high and stocks were reduced 89,000 gallons to 11,240,000 gallons Oct. 28.

Stove distillate shipments continued to lag because of pleasant weather in the middle west. Jobbers are reported to have fairly good stocks on hand. Stocks at reporting plants were 14,562,000 gallons Oct. 28, an increase of 567,000 gallons.

Gas oil shipments and production almost balanced, stocks being increased only 200,000 gallons to 75,045,000 gallons at all plants.

Every group in the field reported reductions in their stocks of fuel oil. For all states but Kansas the reports showed heavier shipments. For the group as a whole shipments increased 2,350,000 gallons to 28,754,000 gallons. Production for the week was 26,351,000 gallons, a decrease of 1,200,000 gallons. Stocks Oct. 28 were 103,717,000 gallons, a reduction of 2,400,000 gallons.

Cities Service Net High

NEW YORK, Oct. 31.—Cities Service Co. in September netted $2,384,162 compared with $1,555,793 in September, 1926.

Revised Government Specifications Show Gasoline Unchanged

By Special Correspondent

WASHINGTON, Oct. 30

THE BUREAU OF MINES has issued, in printed form, the fourth revision of United States government Master Specifications For Lubricants and Liquid Fuels and Methods For Sampling and Testing, the use of which becomes obligatory upon all government purchasing agents on Jan. 21. The specifications are known as Technical Paper 323-B.

They supersede Technical Paper 323-A. They are also described as U. S. Government Specification No. 2d. The last mentioned number is the one assigned to the document by the Federal Specifications Board, the authors of the specificatioins.

Broadly speaking the news in the revised publication is contained in the twelve printed pages, constituting part 3 of the publication, prescribing methods for the taking of samples to be tested. The methods were prepared at the request of the technical committee on lubricants and liquid fuels of the Federal Specifications Board, by committee D-2 of the American Society for Testing Materials. The Specifications Board is responsible for specifications not only for oils but for all things bought for government use.

The new document is notable for the things that have been left out, as for instance, specifications for paraffin wax and electric switch oil. The last mentioned has been turned over to another committee, the one dealing with electrical supplies. New methods for testing have been included to cover penetration of greases and petrolatums; long-time burning oil for use on the government railways in Alaska and Panama; burning quality for mineral seal-oil; burning test for kerosene; emulsion test for soluble cutting oils, corrosion test for solid or semi-solid products; corrosion test at room temperature and an analysis of greases.

Every petroleum specification is preceded by the declaration that "samples shall be taken according to the procedures described in Part 3 of this paper."

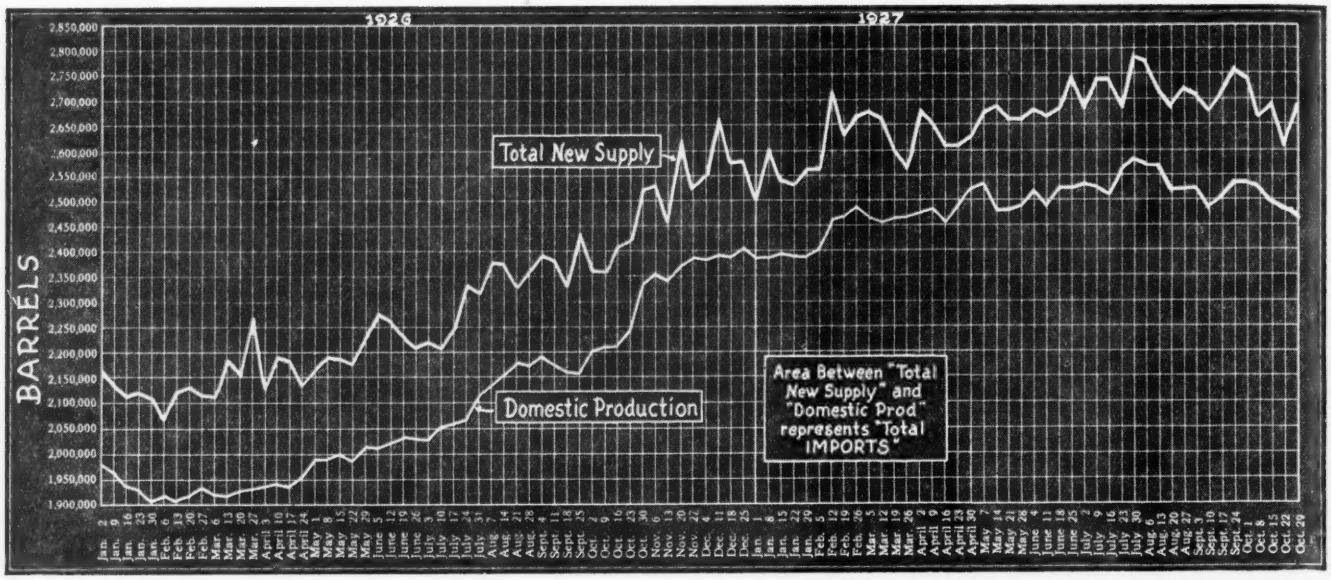
No changes have beein made in gasoline specifications but in the specifications for aviation gasoline, fighting and domestic grade, it is provided that "any military branch may require that samples be submitted for 'approval tests' in addition to the laboratory tests, prior to the submission of bids or award of contract." It is provided that such "approval samples" shall faithfully represent those which the manufacturer intends to offer in the future under a brand name.

The declaration that no change has been made in the specifications for gasoline is to be taken subject to the fact that some time ago the color test was eliminated from the specification for motor gasoline. The new print of course shows no color test for motor gasoline.

Provision is made for only one grade of kerosene. That is the one having a flash point of 115 degrees, heretofore known as navy kerosene. The specifications for 100 degree flash

(Continued on Page 46)

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	Oct. 29	Oct. 22
Production east of Rockies	1,836,950	1,856,850
Decrease		19,900
Total production in U. S.	2,466,550	2,481,750
Decrease		15,200
Crude oil imports	219,153	119,571
Increase		99,572
Total crude supply	2,685,693	2,601,321
Increase		84,372

OKLAHOMA

	Oct. 29	Oct. 22
North Braman	2,750	2,550
South Braman	2,250	2,250
Blackwell	3,900	3,950
Hubbard	3,400	3,300
Thomas	2,850	3,050
Tonkawa	17,150	17,900
Garber	10,150	10,200
Burbank	35,850	35,450
Osage, outside Burbank	30,600	30,650
Watchorn	1,700	1,700
Cushing	21,250	21,250
Yale Jennings	9,550	9,600
Davenport	2,650	2,700
Bristow-Slick	24,900	24,850
North Okmulgee	16,200	16,200
Lyons-Deaner	6,400	6,500
Stroud	1,250	1,300
Cromwell	11,300	11,450
Papoose	6,100	6,200
Wewoka	12,700	14,200
Seminole	64,700	68,150
Bowlegs	121,300	125,650
Searight	23,600	26,950
Little River	45,050	44,400
Earlsboro	155,450	166,400
Duncan district	6,950	6,950
Graham	6,500	6,500
Fox	1,900	1,900
Healdton	14,900	14,950
Hewitt	9,300	9,400
Scholem Alechem	13,000	13,500
Others	69,450	69,200
Total Oklahoma	757,700	779,200
Decrease		21,500

KANSAS

Greenwood County	32,200	32,350
Florence-Covert	1,500	1,500
Peabody-Elbing	3,850	3,850
Eldorado-Towanda	14,300	14,250
Augusta-Fox-Bush	4,200	4,250
Rainbow Bend	2,100	2,150
Russell	2,500	2,500
Churchill	14,100	13,800
Others	30,600	30,300
Total, Kansas	105,350	104,950
Increase		400

NORTH LOUISIANA

Homer	4,550	4,750
Haynesville	7,150	7,150
Caddo, light	12,650	13,100
Caddo, heavy	4,700	4,550
De Soto, Red River	3,950	4,300
Elm Grove	700	700
Bellevue	1,200	1,250
Cotton Valley	5,150	5,200
Urania	9,200	9,300
Pleasant Hill	1,600	750
Total, North Louisiana	50,850	51,050
Decrease		200

ARKANSAS

El Dorado	6,100	6,150
Smackover, light	9,750	10,000
Smackover, heavy	76,900	77,450
Stephens	1,200	1,200
Nevada	3,000	2,950
Lisbon	3,000	3,050
Others	100	100
Total, Arkansas	100,050	100,900
Decrease		850

TEXAS (OUTSIDE GULF COAST)

Panhandle District

	Oct. 29	Oct. 22
Hutchinson County	64,600	65,700
Carson County	8,100	8,100
Gray County	15,500	13,500
Wheeler County	1,300	1,350
Others	50	50
Total, Panhandle District	89,550	88,700
Increase		850

North Texas

Burkburnett	12,750	12,900
Electra	12,200	12,500
Iowa Park and K-M-A	2,100	2,250
Wilbarger	11,550	11,800
Archer County	22,850	23,000
Montague-Cooke	16,600	16,250
Others	600	600
Total, N. Tex.	78,650	79,300
Decrease		650

West Central Texas

Stephens County	8,200	8,500
Eastland-Desdemona	8,700	8,950
Brown County	19,000	20,000
Coleman County	1,000	1,050
Callahan County	3,750	4,000
Shackelford County	5,250	5,000
Young County	9,750	10,000
Throckmorton County	1,100	1,200
Palo Pinto County	600	600
Others	1,400	1,400
Total, West Central Texas	58,750	60,700
Decrease		1,950

West Texas

Jones County	1,500	1,650
Mitchell & Scurry Counties	3,550	3,650
Howard County	3,550	3,200
Reagan County	23,250	23,400
Crane and Upton Counties	127,400	132,500
Crockett County	2,350	2,100
Pecos County	30,700	31,400
Winkler	15,750	10,300
Others	2,900	2,800
Total, W. Texas	210,950	211,000
Decrease		50

East Central Texas

Mexia	8,950	9,050
Currie	600	650
Richland	700	700
Wortham	2,600	2,600
Corsicana-Powell	13,500	13,850
Nigger Creek	2,400	1,400
Total, East Central Texas	28,750	28,250
Increase		500

Southwest Texas

Luling	15,200	15,000
Lytton Springs	1,500	1,650
Somerset	850	850
Laredo District	8,200	8,500
Dale	400	300
Others	400	400
Total, Southwest Texas	26,550	26,700
Decrease		150
Total, Texas—(Outside Gulf Coast)	493,200	494,650
Decrease		1,450

GULF COAST

Coastal Texas

West Columbia	9,050	8,900
Damon Mound	850	850
Big Creek	3,500	3,800
Boling	2,300	2,400
Blue Ridge	3,000	3,500
Pierce Junction	10,900	7,500
Humble	2,000	2,000
Goose Creek	7,700	8,000
South Liberty	2,400	2,000
Hull	16,050	17,050
Saratoga	1,050	1,100
Batson	1,300	1,300
Sour Lake	4,100	4,200
Spindletop	53,500	53,550
Orange County	4,550	4,100
Others	2,800	3,000
Total, Coastal Texas	125,050	123,250
Increase		1,800

Coastal Louisiana

Vinton	4,850	4,850
Lockport	5,300	5,600
Evangeline	1,300	1,350
Edgerly	2,200	2,300
Others	1,150	1,300
Total, Coastal Louisiana	14,800	15,400
Decrease		600
Total Gulf Coast	139,850	138,650
Increase		1,200

ROCKY MOUNTAIN

Wyoming

Salt Creek	34,050	32,400
Grass Creek	2,500	2,700
Elk Basin	1,050	1,250
Big Muddy	2,950	2,950
Lost Soldier	2,200	2,350
Rock River	2,700	2,600
Lance Creek	1,350	1,350
Teapot Dome	1,000	950
Others	4,200	4,400
Total, Wyoming	52,000	50,950
Increase		1,050

Montana

Cat Creek	1,950	2,000
Sunburst	11,500	11,500
Others	250	200
Total, Montana	13,700	13,700

Colorado

Moffat (Craig)	1,550	1,500
Fort Collins	3,200	2,700
Florence	900	800
Others	1,350	1,400
Total, Colorado	7,000	6,400
Increase		600

New Mexico

Table Mesa	100	100
Artesia	1,250	1,400
Hogback	300	300
Rattlesnake	500	.....
Others	100	100
Total, N. Mexico	2,250	1,900
Increase		350
Total, Rocky Mountain	74,950	72,950
Increase		2,000

California

Santa Fe Springs	39,000	39,000
Long Beach	98,500	93,000
Huntington Beach	61,000	61,500
Torrance	20,000	20,000
Dominguez	15,000	15,000
Rosecrans	8,000	7,500
Inglewood	32,500	32,500
Midway-Sunset	84,000	84,000
Ventura Avenue	57,600	55,400
Seal Beach	56,000	59,000
Others	158,000	158,000
Total California	629,600	624,900
Increase		4,700

Eastern

(Including Ill., Ind., Ky., Ohio, W. Va., Pa., and N. Y.)	115,000	114,500
Increase		500

Gypsy's Wildcat East of Searight Pool Producing High Gravity Oil

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, Oct. 29

THERE has been some asking of late of the unnecessary question, "Where will we get enough high gravity crude?"

The Gypsy Oil Co. at the tag end of the week answered the question as to where at least a little of it will come from by bringing in a 3700-foot well midway between the old Cromwell field and the Searight pool, both in Seminole county.

As this is written, no gauge had been obtained on the new well, which was described as flowing by heads every 15 minutes. Estimates ranged from 500 to 1000 barrels per day. The sand is the Cromwell, which is the equivalent of the Lyons farther north, and the gravity of the oil is reported about the same as that in the Cromwell field, of T. 10-8, which was 38-39° A.P.I.

Location of the new strike is in the SE NE of 21-10-7. A dry sand was drilled from 3700 to 3712 feet, shale break from 3712 to 3730 feet. The present total depth is 3730 feet and the pay just scratched. The lease on the Solomon farm, on which the test was drilled, was originally held by the Adrienne Oil Co., controlled by H. E. Clark, of Philadelphia. Gypsy took a half interest in this lease and in other nearby acreage of the same company, in return for which it drilled the well and will operate the property.

H. E. Clark is also the president of the Laurel Oil & Gas Co., which has upward of 1,000 barrels daily production in Oklahoma and operates gasoline plants.

This Gypsy-Adrienne joint ownership holds leases on everything immediately adjoining the well, with the exception of 120 acres in the southeast of Sect. 21, which is held by the Prairie Oil & Gas Co.

Several dry holes have been drilled in the vicinity but none within a mile of the producer. In the NW SW of 28-10-7, about a mile and a quarter southwest, the Continental Oil Co. is charged up with a dry one at 4,660 feet—a Wilcox test. In the SE SE of 34-10-7, the Gypsy drilled one to depth of 4,606 feet with no result. This is about three miles in a direct line south and a little east of the Solomon well. There is a Wrightsman Petroleum Corp. failure 4,011 feet deep, in the SE NW of 31-10-7, two and one-half miles southwest of the discovery and in the next 40-acre tract west of the Wrightsman well, the Carter drilled one to depth of 3,010 feet.

One and one-fourth miles due northeast, in the NW SW NW of 14-10-7, is an old dry one drilled to 3,784 feet and a mile beyond this in the SW SW NW of 12-10-7, the Prairie drilled a Wilcox test to total depth of 4,528 feet.

There is, therefore, room for a good sized pool in between the dry holes and there is nothing due southeast, north or northwest to limit production as things now stand. Geological opinion appears to be unfavorable to the area, though, as the new well is said to be lower structurally than equivalent formations in some of the dry holes.

ASIDE from this well the week was featured only by the continued decline in the Seminole district which appears to be due to break under 400,000 barrels soon.

The district went through the week as follows: Based upon the production dates of Oct. 21 and 28, Earlsboro added 9 wells and lost 13,578 barrels; Little River gained 11 wells and added 4,296 barrels; Searight added one well and increased 188 barrels; Bowlegs gained 5 wells and lost 3,425 barrels; Seminole City gained 1 well and lost 2,314 barrels. For the five pools of the district, the gain was 27 wells and a drop in production of 14,833 barrels.

The district crossed the 400,000-barrel figure on June 24 when the production was 400,467 barrels. It made this jump from 393,125 barrels the previous day.

For purposes of comparison with the present production of the five pools, their individual peaks are interesting. The high mark of the old Seminole City pool was reached Feb. 21, when 201 wells produced 265,432 barrels. The Earlsboro peak was Aug. 10, the high being 208,864 barrels from 128 wells. Bowlegs saw its best day on Aug. 13, when 194 wells made 187,914 barrels. Searight made as its peak 41,131 barrels from 42 wells on June 16. The Little River pool's high thus far was Oct. 20 when 43 wells made 47,152 barrels.

The peak of the district was July 30, being 527,401 barrels from 638 wells.

The Earlsboro decline is on in dead earnest now and promises to contribute the most of the downfall for some weeks. It still has more drilling under way than any of the other fields, with a total of 118 operations on a recent date, of which 78 are drilling below 3,700 feet and are, therefore, soon to be completed. Little River is next most active with 93 operations of which 48 are below 3,700 feet.

THE rather wholesale granting of permission to shoot wells in the district, except Little River, early the past week, is being followed by action, but results thus far are not noticeable. Nearly all the 121 wells on the list to be shot are now making small production and the reason for shooting many of them is to clean out and put to pumping. There is now no restriction on shooting at Searight, where water is coming on fast on most of the producing leases, and in this field the desire to shoot

Drilling Operations in Oklahoma, Kansas and Texas, Week Ended October 29, 1927

	October 29 Week Ended					October 22				
	Loc.	Rigs	Drg.	S.D.	Total	Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	1	3	8	6	18	1	3	7	9	20
Other Osage	11	11	14	6	42	8	6	14	6	34
Bristow-Cushing	3	2	32	8	45	4	3	29	9	45
North Oklahoma	13	11	54	45	123	14	9	56	43	122
South Oklahoma	5	13	118	33	169	7	11	112	39	169
Muskogee	..	4	33	18	55	..	6	26	19	51
Okmulgee-Bristow	7	35	60	19	121	7	44	46	23	120
Tonkawa	..	1	3	2	6	1	..	2	3	6
Seminole Dist	23	20	253	35	431	25	21	386	36	468
Total Oklahoma	63	100	675	172	1,010	67	103	678	187	1,035
KANSAS	26	38	111	66	241	25	39	117	64	245
TEXAS										
Central	..	103	190	138	431	..	81	175	134	310
Panhandle	..	93	68	103	264	..	89	72	100	261
N. Central	..	44	77	29	150	..	38	72	32	142
West	..	127	189	101	417	..	130	159	113	402
Laredo	..	1	25	19	45	..	1	25	19	45
Total Texas	..	368	549	390	1,307	..	339	503	398	1,240
GRAND TOTAL	89	506	1,335	628	2,737	92	481	1,298	649	2,680

Seminole District Production by Companies and Leases, October 28 and October 21, 1927

Company	Farm	S.T.R.	October 28th No. Wells	October 28th Prod.	October 21 No. Wells	October 21 Prod.
BOWLEGS						
Amerada	Rascoe	15- 8-6	8	4,600	8	4,500
Atlantic	Baker	1- 8-6	4	1,552	4	1,369
Atlantic	Fleet	23- 8-6	4	1,380	4	1,507
Atlantic	Grayson	12- 8-6	2	1,821	2	2,059
Atlantic	A. Jones	16- 8-6	3	198	3	203
Atlantic	C. Jones	9- 8-6	2	971	1	872
Total Atlantic			15	14,263	14	6,010
Barnsdall	McNac	28- 8-6	1	40	1	40
Barnsdall	Murrow	11- 8-6	4	1,264	4	1,614
Total Barnsdall			5	1,304	5	1,654
Carter	Bowlegs	15- 8-6	3	1,575	3	1,670
Carter	Burden	23- 8-6	2	565	2	410
Carter	Jones	11- 8-6	3	2,380	2	2,660
Carter	Harjoche	15- 8-6	6	1,345	6	1,420
Carter	Hilly	23- 8-6	1	1,140	1	1,205
Carter	Walker	15 -8-6	2	540	2	640
Carter	Wise	23- 8-6	12	8,275	12	9,045
Total Carter			29	15,820	30	17,050
Empire	Lacey	15- 8-6	6	960	6	1,189
Empire	Wise	23- 8-6	2	1,500	2	1,630
Total Empire			8	2,460	8	2,869
Gypsy	Bowlegs	22- 8-6	1	370	1	400
Gypsy	Brown	33- 8-6	1	100	1	100
Gypsy	Cumsey	8- 8-6	4	1,420	4	1,497
Gypsy	Grayson	13- 8-6	4	1,225	4	2,920
Gypsy	Walker	15- 8-6	8	3,047	8	3,399
Gypsy	Wise	23- 8-6	3	245	3	62
Total Gypsy			21	6,407	21	11,197
Independent et al	Coker	21- 8-6	1	145	1	126
I. T. I. O.	Barnett	24- 8-6	2	856	2	699
I. T. I. O.	Billington	22- 8-6	4	1,066	4	1,189
I. T. I. O.	Bowlegs	22- 8-6	11	1,993	11	2,224
I. T. I. O.	Davis	13- 8-6	4	1,394	4	1,722
I. T. I. O.	Fay	18- 8-6	5	6,300	5	4,482
I. T. I. O.	Goforth	15- 8-6	11	1,940	11	1,997
I. T. I. O.	Hull	26- 8-6	1	317	1	170
I. T. I. O.	Livingston	15- 8-6	11	6,956	11	7,248
I. T. I. O.	Lizzie	11- 8-6	2	473	2	533
I. T. I. O.	Walker	15- 8-6	8	1,562	8	1,476
I. T. I. O.	Wilmont	15- 8-6	4	2,048	4	2,179
I. T. I. O.	Work	24- 8-6	1	0	1	22
I. T. I. O.	Youngblood	23- 8-6	2	608	2	575
Total I. T. I. O.			64	25,413	66	24,516
McCulloch	Bowlegs	22- 8-6	3	215	3	340
Magnolia	Hammond	10- 8-6	2	24	2	96
Mid-Continent	Baker	10- 8-6	4	3,175	4	3,212
Mid-Continent	Bowlegs	22- 8-6	1	560	1	615
Total Mid-Continent			5	3,740	5	3,829
Minnehoma	Bowlegs	15- 8-6	4	271	4	487
Prairie	Gahagan	23- 8-6	4	730	4	869
Prairie	Harber	10- 8-6	7	3,335	7	3,145
Prairie	Jones	11- 8-6	2	2,155	2	2,160
Prairie	Templeton	12- 8-6	1	2,205	1	2,300
Prairie	Whitney	23- 8-6	4	230	4	180
Total Prairie			18	8,655	18	8,654
Pure	Reed	14- 8-6	16	7,297	16	8,161
Pure	D. Strother	14- 8-6	3	1,029	3	959
Pure	F. Strother	10- 8-6	1	601	1	616
Total Pure			20	8,927	20	9,736
Roxana et al	Taylor	16- 8-6	6	2,063	6	2,162
Shaffer	Lacey	14- 8-6	3	597	3	727
Sinclair	Bowlegs	22- 8-6	1	120	1	60
Sinclair	Cumsey	10- 8-6	2	3,875	2	3,626
Sinclair	Ellen	11- 8-6	6	4,000	6	3,944
Sinclair	Harjo	14- 8-6	3	1,830	3	1,885
Sinclair	Jones	8- 8-6	4	7,205	4	7,079
Sinclair	Taylor	10- 8-6	4	3,360	4	3,855
Sinclair	Walker	22- 8-6	4	1,250	4	1,580
Total Sinclair			24	21,640	24	22,029
Texas	Reed	14- 8-6	9	7,230	8	6,250
Tidal	Grayson	13- 8-6	3	1,400	3	1,650
Tidal	Harjoche	10- 8-6	5	2,010	4	1,975
Total Tidal			8	3,410	7	3,625
Twin State	Jones	11- 8-6	2	1,030	2	1,390
TOTAL BOWLEGS			261	119,953	256	123,378
LITTLE RIVER						
Amerada	Fore	35- 8-6	1	1,350	1	1,675
Amerada	Nitey		3	2,580	0	0
Blackwell	Nitey	35- 8-6	7	6,372	7	7,053
Carter	Fish	1- 7-6	1	1,060	1	85
Continental	Cozar	2- 7-6	1	1,540	1	1,255
Gypsy	Campbell	36- 8-6	2	2,207	1	1,999
Gypsy	Nungee	1- 8-6	1	80	0	0
Gypsy	Pottey	35- 8-6	1	1,820	1	2,077
Gypsy	Wadsworth		1	30	0	0
Total Gypsy			5	4,137	2	4,076
I. T. I. O.	Dungan	35- 8-6	3	4,132	3	2,743
I. T. I. O.	WE House-A	1- 7-6	1	0	1	549
I. T. I. O.	WE House-B	2- 7-6	2	2,485	1	1,189
I. T. I. O.	MA House	1- 7-6	1	1,634	1	1,348
I. T. I. O.	Jackson	1- 7-6	3	4,139	3	4,605
I. T. I. O.	McCulla	1- 7-6	2	957	0	0
I. T. I. O.	Nitey	2- 7-6	3	4,283	3	3,810
I. T. I. O.	Phoebe-A	36- 8-6	1	762	0	0
I. T. I. O.	Reed	1- 7-6	1	1,139	1	1,189
I. T. I. O.	Soketneche	1- 7-6	3	627	2	962
Total I. T. I. O.			20	20,158	15	16,395
Mid-Continent	Wadsworth	36- 8-6	5	2,105	5	2,265
Philmack	Reed	1- 7-6	1	590	1	685
& R	Dun gan	35- 8-6	1	400	1	900
P & R	House	2- 7-6	3	2,565	2	3,665
Total P & R			4	2,965	3	4,565
Roxana	Jimpsey	1- 7-6	1	0	1	90
Superior	Wadsworth	1- 7-6	1	93	1	101
Texas	Coker	1- 7-6	1	180	0	0
Tidal	House	1- 7-6	2	2,500	2	3,080
TOTAL LITTLE RIVER			54	45,630	43	41,334
EARLSBORO						
Amerada	Anderson	15- 8-6	5	2,940	5	2,590
Amerada	Cowden	4- 9-5	7	2,295	6	2,355
Amerada	Rodgers	3- 9-5	2	2,635	2	3,110
Total Amerada			14	7,870	13	8,055
Barnsdall	Brown	10- 9-5	4	2,605	4	3,802
Barnsdall	F. Bruner	2- 9-5	1	615	0	0
Barnsdall	N. Bruner	11- 9-5	3	3,976	3	4,768
Barnsdall	Cudjo	11- 9-5	1	49	1	30
Barnsdall	D-Davis	11- 9-5	3	1,675	3	2,136
Barnsdall	J-Davis	11- 9-5	3	1,831	2	1,461
Barnsdall	M-Davis	11- 9-5	3	1,483	3	1,628
Barnsdall	Gibson	9- 9-5	6	3,740	6	1,363
Barnsdall	Hearn	15- 9-6	1	7	1	17
Barnsdall	Ingram	4- 9-5	6	5,065	5	4,662
Barnsdall	Pack	10- 9-5	4	432	4	844
Barnsdall	Peter	10- 9-5	4	574	4	760
Barnsdall	Sango	2- 9-5	1	127	1	120
Barnsdall	Sebolka	15- 9-5	1	2,102	1	2,327
Barnsdall	Sullivan H	11- 9-5	2	1,073	2	620
Barnsdall	Sullivan	10- 9-5	2	52	3	54
Barnsdall	Watsutke	12- 9-5	3	1,708	3	1,379
Total Barnsdall			48	27,111	46	26,459
Carter	Davis	13- 9-5	1	630	1	265
Carter	Payne	12- 9-5	2	1,260	2	1,775
Carter	Sango	2- 9-5	3	2,805	2	3,185
Total Carter			6	4,695	5	5,525
Continental	Kays	2- 9-5	2	1,995	1	420
Continental	Spencer	12- 9-5	4	8,220	4	10,860
Total Continental			6	10,215	5	11,280
Crosbie	Bryant	9- 9-5	2	2,712	2	2,610
Empire	Edmundson	3- 9-5	3	2,866	3	3,065
Gypsy	Bruner	10- 9-5	4	3,145	4	3,472
Gypsy	Carter	11- 9-5	9	3,712	8	3,975
Gypsy	Hunick	5- 9-5	1	767	1	447
Gypsy	Noble	12- 9-5	4	11,305	3	11,952
Gypsy	Peter	10- 9-5	6	1,222	5	1,212
Gypsy	State	16- 9-5	4	517	4	567
Gypsy	Sango	1- 9-5	2	1,770	2	870
Total Gypsy			30	22,440	27	22,505
Independent	Bruner	10- 9-5	4	4,455	4	5,372
Independent	Gaines	11- 9-5	2	7,915	3	9,195
Independent	Knappen	8- 8-5	5	3,185	5	3,450
Independent	O'Dell	4- 9-5	4	775	4	1,225
Independent	Sullivan	10- 9-5	4	283	4	535
Total Independent			19	16,613	20	19,777
Interocean	Payne	12- 9-5	1	0	1	75
Magnolia	Bryant	9- 9-5	4	1,842	4	1,802
Magnolia	Cowden	4- 9-5	2	213	2	440
Magnolia	Edmundson	3- 9-5	2	436	2	937
Magnolia	Holmsley	11- 9-5	6	3,766	5	3,176
Magnolia	Ingram	10- 9-5	1	37	1	22
Magnolia	Lena	10- 9-5	3	354	3	450
Magnolia	Seay	12- 9-5	4	3,335	4	1,239
Magnolia	Simpson	10- 9-5	4	815	4	371
Magnolia	Sparks	11- 9-5	7	3,876	7	4,477
Magnolia	Sullivan	12- 9-5	2	2,747	2	3,540
Total Magnolia			35	17,422	34	16,454
Mid-Continent	McCumber	9- 9-5	7	1,340	7	1,890
Mid-Kansas	Anderson	14- 9-5	3	730	2	685
Phillips	Dunnaway	15- 9-5	1	16	1	35
Phillips	Graham	9- 9-5	6	745	6	825
Total Phillips			7	761	7	860
Prairie	Baker	23- 9-5	1	50	1	50
Prairie	Davis	13- 9-5	4	1,005	4	1,440
Prairie	C Graham	3- 9-5	2	820	2	1,055
Prairie	O Graham	10- 9-5	4	4,235	4	4,375
Prairie	Stidham	11- 9-5	13	8,155	13	8,015
Total Prairie			24	14,265	24	14,935
Roxana	Bayliss	17- 9-5	1	19	1	17
Roxana	Spencer	12- 9-5	2	866	2	1,795
Total Roxana			3	885	3	1,812
Shaffer	Clark	1- 9-5	2	48	2	147
Sinclair	Foreman	18- 9-5	1	15	1	15
Sinclair	Hollins	12- 9-5	3	1,294	3	2,240
Total Sinclair			4	1,309	4	2,255
Skelly	Spencer	12- 9-5	2	3,565	2	4,657
Texas	Anderson	2- 9-5	1	131	1	145
Texas	Brown	10- 9-5	4	1,500	4	1,850
Texas	Rodgers	5- 9-5	2	7,260	2	7,240
Texas	Wilmont	10- 9-5	5	935	5	762
Total Texas			12	9,826	12	9,997
Tidal	Watkins	9- 9-5	4	1,815	4	2,760
Twin State	Baker	12- 9-5	4	500	3	4,720
Twin State	Hearn	2- 9-5	2	1,765	2	1,835
Total Twin State.			6	2,265	5	6,555
TOTAL EARLSBORO			243	148,490	234	162,068
TOTAL LITTLE RIVER			54	45,630	43	41,334
TOTAL SEARIGHT			59	26,454	58	26,266
TOTAL BOWLEGS			261	119,953	256	123,378
TOTAL SEMINOLE			331	64,333	330	66,647
GRAND TOTAL SEMINOLE DISTRICT			948	404,860	921	419,693
Avg. Per Well				427		445

"At present, overproduction is approximately a million barrels a day.

"If this immense surplus were permitted to remain in the earth, our future needs would be assured, our national life more surely safeguarded."

Extract from the speech of Hon. Hubert Work Secretary of the Interior and Chairman of the Federal Oil Conservation Board, before the Mineral Law Section, American Bar Association, at Buffalo, August 30, 1927

Universal Oil Products Company
Owner of the Dubbs Process
310 South Michigan Ave
Chicago, Illinois

Completions in N. E. Central, West, Panhandle and North Texas, Week Ended October 29, 1927

NORTH AND EAST CENTRAL TEXAS

Anderson County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Humble	2-Spencer	Benson	T.D. 3690	Dry

Brown County

Humble	11-Armstrong	Delgado	1197-1220	259
Kone Prod.	6-Hickman	Benson	1205-1228	36
Lent Bros.	1-Armstrong	H&GN	1404-1404	1M
Cranfill et al	9-Smith	SA&MG	1340-1361	390
Hughes	2-Gilbreth	SA&MG	1314-1360	5
Humble	5-Gilbreth	SA&MG	1305-1318	644
Phillips	3-Newsome	Presslar	1315-1332	(10 & 1.7 M)
Sinclair	8-Smith	SA&MG	1329-1339	250
Smith	5-Smith	SA&MG	1331-1357	10
Smith	9-Smith	SA&MG	1333-1359	175
Smith	19-Smith	SA&MG	1332-1356	400
Golden Rod	1-Taylor	Krebes	1395-1567	1M
Clark et al	2-Guyer	Flres	835-841	10
Veale	9-Wooldridge	ET	T.D. 1284	Dry
Ross	1-Spencer	Swindle	T.D. 1227	Dry
Mitcham	1-Keller	Badilla	T.D. 2037	Dry
Curtis et al.	1-Marr	Betts	T.D. 1128	Dry
Von Dron et al	2-Lewis	Kennedy	T.D. 1222	Dry
Van Bibber et al	1-Evans	Woodward	T.D. 1612	Dry
Shell	1-McGaughey	Corbit	T.D. 1109	Dry
Warner	1-Ratleff	McCuley	T.D. 1350	Dry

Eastland County

Allsworth et al	1-Clemer	Frells	T.D. 1310	Dry
Teatsorth	2-Hargus	House	T.D. 1573	Dry
Lewis	1-Fox	McLennan	T.D. 1574	8
Texas	19-Hightower	Van Norman	1198-1208	20
Thomas et al	2-Chesley	TP	3808-3828	6M
Texas (Mook)	6-Sibley	Van Norman	3062-3075	30
Mook Texas	8-Sibley	Van Norman	3060-3066	8
Barkley et al	1-Duffer	McLennan	2977-2998	7 & 27M

Haskell County

Marland et al	1-Clark	Claugh	T.D. 2503	Dry
Kouri et al	1-Boulden	H&TC	T.D. 2003	Dry

Jack County

Buttram	4-Jones	SP	1996-2007	125
Liedecker et al	3-Hollman	Pier	2011-2017	100

Jones County

Brewer et al	1-Milsap	League	T.D. 3001	Dry

McCulloch County

Wakefield et al	1-Dutton	Froelsick	T.D. 814	Dry

Palo Pinto County

DeWitt	1-Humphries	TE&L	T.D. 1500	Dry

Shackleford County

Sinclair	10-Nail	ET	1514-1538	8
Wentz	11-Reynolds	T&P	1271-1287	27

Young County

Roxana	12-Ford	Carter	3899-4351	179
Sun	6-Donnell	TE&L	3342-3360	120

PANHANDLE

Gray County

Delaney et al	1-Riley	H&GN	2980-2984	6144
Gibson	1-Bowers	H&GN	3107-3130	1400

Hartley County

Company	Well Farm	Location Survey	Depth	Init. Prod.
McKanna	1-Capitol Lands	GS&S	T.D. 3500	Dry

Hutchinson County

Phillips	13-Gibson	H&TC	2674-2713	300
Texas	3-Lewis	Bs&F	2945-3084	15

Sherman County

Marland	1-Floren	T&NO	T.D. 4002	Dry

Wheeler County

Piney	1-Ackley	IGN	1885-1978	81M
Tecas	1-Bell	H&GN	2145-2740	35

NORTH TEXAS

Archer County

Roberts	2-Garvey	TEL	767-772	37
Stidham et al	1-Evans	Minton	T.D. 2555	Dry
Maer et al	1-Seay	Harris	T.D. 1603	Dry
Consolidated et al	1-Crawford	Harris	T.D. 1625	Dry
Clark	1-O'Donnell	Crawford	T.D. 1335	Dry
Underwood et al	5-Ward	TE&L	T.D. 1040	Dry

Cooke County

St. Jo	1-Harris	Harris	T.D. 2005	Dry

King County

White Eagle	1-Burnett	Thompson	T.D. 3506	Dry

Montague County

Pace et al	1-Cobb	Barnes	T.D. 2003	Dry
Humble	1-Hinton	Coates	771-798	35
Gulf	1-Loy	Donoho	T.D. 1285	45

Wichita County

Humble	2-Chilson	DCSL	T.D. 741	Dry

Young County

Texas	1-Campbell	TE&L	T.D. 1162	Dry
Ryan et al	1-Petty	TE&L	T.D. 868	Dry

WEST TEXAS

Crane County

Magnolia	4-State	Univ.	2977-3107	50
Simms et al	8-Univ.	Univ.	2822-2973	620
Landreth	16-State		2900-2937	80
Tidal	5-Univ.	Univ.	2770-2932	935

Crockett County

Anderson et al	1-Univ.	Univ.	T.D. 2631	Dry
Marland et al	1-Smith	GH&SA	T.D. 3240	Dry

Pecos County

Humble	1-Smith	T&C	1425-1600	73
Marland et al	6-Yates	T&C	1495-1632	215
California	1-Smith	GC&SF	1250-1331	500
Marland et al	2-Yates	TC	1259-1291	545
Buell et al	1-Jasper	CSL	T.D. 2907	Dry

Upton County

Gulf Prod.	5-Lane	GC&SF	1962-2056	250

Winkler County

Humble	1-Hendricks	PSL	T.D. 3258	Dry
McCullough et al	1-Morton	PSL	T.D. 3505	Dry

was based on the theory that a little more oil might be recovered before the whole thing dies.

No notable wells were completed in any of the Seminole district pools during the week, for that matter, anywhere in the Mid-Continent. One of the spots now in consideration is sections 22 and 23 of the 7-6 country, south of the Little River pool and in the same township. Independent Oil & Gas Co.'s test in Sec. 23 got the top of the Viola lime at 4186 feet and at 4200 feet had a small showing. It will be completed within a few days. The test is of more than ordinary interest because of the unfinished test of the Barnsdall Oil Co., in Sec. 22, about a mile away, which had a good enough showing to frighten the company and lead it to shut down for fear of bringing in a new pool.

With the decline of Seminole has come a flurry of apprehension—maybe the word is too strong—over the future of the high gravity oil supply and inquiries have been coming in numbers to the companies who have Seminole oil in storage.

Supply Companies Win Rail Refunds

WASHINGTON, Oct. 31.—Thirty-nine oil companies and oil well supply houses in the southwest have been advised by the Interstate Commerce Commission that they are entitled to refunds from the railroads of the country amounting to $4,000,000 to $5,000,000.

The rate body made this announcement in the form of a decision that, since Nov. 27, 1923, the railroads have been charging unreasonably high rates on shipments of field equipment, iron and steel pipe, and iron and steel tank material, between points in Kansas, Oklahoma, the eastern part of Texas, Arkansas and western Louisiana.

Refunds are to be made on the basis of the reduced rates the regulating body found reasonable in the Consolidated Southwestern Cases. Forty odd suits were filed by the oil and supply companies asking refunds on shipments as far back as 1921. The rate body, however, said the rates prior to Nov. 27, 1923 were not unreasonably high, because on that day it ordered the railroads to establish new rates. The railroads complied in part but not on the supplies the oil industry uses. They thought they could persuade the commission to change its decision.

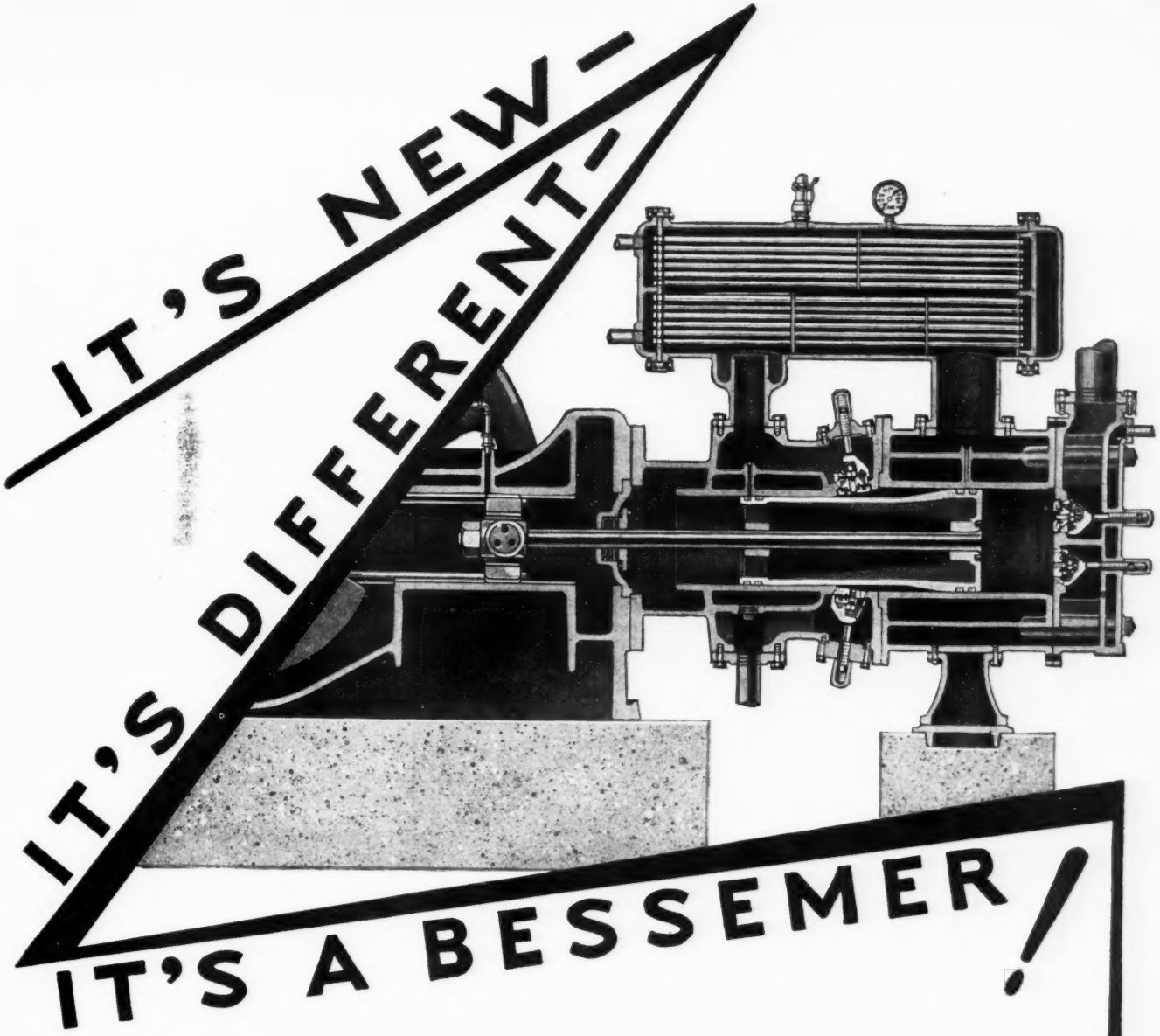
The companies to which refunds are to be made are:

Prairie Pipe Line Co., Prairie Oil & Gas Co., Sun Oil Co., Twin State Oil Co., Phillips Petroleum Co., Cosden Oil & Gas Co., Carter Oil Co., Bradford Rig & Reel Co., Lee C. Moore & Co., McGraw-Baughman-Bearly Lumber Co., Oklahoma Iron Works, Parkersburg Rig & Reel Co., American Eagle Oil Co., Consumers Gas Co.

Empire Gas & Fuel Co., Empire Gasoline Co., Oklahoma Natural Gas Co., Oklahoma Tool & Supply Co., McEwen Manufacturing Co., Tulsa Rig & Reel Manufacturing Co., International Supply Co., Slater Steel Rig Co., Braden Co., Atlas Supply Co., Empire Pipe Line Co., Empire Refineries, Incorporated.

Kansas Natural Gas Co., Midland Oil Co., Steyner Oil Co., Fred M. Lege, Jr., H. F. Wilcox Oil & Gas Co., Sinclair Crude Oil Purchasing Co., Sinclair Oil & Gas Co., Oklahoma Salvage & Supply Co., M. M. Valerius Oil & Gas Co., Lone Star Gas Co., Gypsy Oil Co., Atlantic Oil Producing Co., Skelly Oil Co., Community Natural Gas Co.

White Eagle Oil & Refining Co.—$4870,000 5½% sinking fund debentures due March 15, 1937, listed on New York Stock exchange. These bonds since issuance have been marketed on the New York Curb.



THE NEW Bessemer SA-2 Compressor Cylinder is an innovation in compressor design. It is a Single Acting Two Stage Cylinder which combines both low and high stages in *one* cylinder. It is compact, accessible and highly efficient, and heralds new high standards of performance, even for a Bessemer.

Many of the features of the Bessemer V.H. cylinders have been incorporated —such as valves, method of fastening valves, style of head for low pressure cylinder and cooling system—but the arrangement of cylinders and piston is unique in compressor design.

Both high and low stages are single acting. Compression takes place in the low stage on the outward stroke of the piston and in the high stage on the inward stroke. The load on each stroke is equalized by properly proportioning the two areas to suit the operating conditions.

The new Bessemer SA-2 cylinder is the latest development in compressor building. Its simplicity will arouse instant interest; its ruggedness will be readily apparent; and its exclusive features which minimize maintenance will win a hearty welcome.

Write for bulletin describing its principle of operation and outstanding features.

THE BESSEMER GAS ENGINE COMPANY
70 York Street ∴ ∴ Grove City, Pa.

Completions in Oklahoma and Kansas, Week Ended October 29, 1927

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Roxana	1	NWc SW SW 20-1-3 W	3220-3435	50
Magnolia	4	SWc NW NW 15-2-2 W	1865-1881	7
Magnolia	3	SWc NW 22-2-3 W	T.D. 3388	Dry

Creek County

Henry	1	NEc SW SE 4-17-11 E	T.D. 2396	Dry
Grieves	3	CWL SW SE 12-19-8 E	2440-2498	35
Dixie	3	NEc SE SE 1-17-9 E	1778-1806	20
Skelly	2	SWc SE NW 32-17-10 E	2695-2880	35
Prod. & Ref.	3	NWc NE SE 18-14-10 E	3423-3440	460
Donnelly et al.	3	NWc SE 20-14-10 E	2786-2850	25

Grady County

Grant et al.	1	NEc SW 21-4-6 W	T.D. 3028	Dry
Carter	8	NWc SW NE 34-3-5 W	T.D. 2810	Dry

Hughes County

Gibson et al.	2	NWc SE 16-10-9 E	3256-3277	30M

Jefferson County

Bassett	1	C NE NW 15-8-8 W	T.D. 3000	Dry
Tweed-Leach	1	SEc NW 9-6-7 W	T.D. 2500	Dry

Kay County

Elk Prod.	1	NEc NW 2-25-2 W	T.D. 4685	Dry
Harris et al.	2	C W½ SW 15-29-1 W	1630-1642	9M
Harold	6	C W½ SE SW 4-27-1 W	2375-2377	3½M

Lincoln County

Madden-Madden	1	SWc SE 20-15-6 E	T.D. 4381	Dry

Logan County

Ramsey Bros.	1	SWc SE NE 16-18-4 W	3988-4000	11½M

Muskogee County

Summers	1	SEc NE NW 28-15-16 E	1440-1442	6M
Peterson	6	C Se SE 18-14-17 E	1412-1418 OWD	90
Dixon	4	C NE 11-14-18 E	881-896	2M

Okfuskee County

Burke-Greis	2	SWc NE SW 36-11-9 E	3113-3175	11M
Minnehoma	1	NWc NE NW 30-11-11 E	3606-3644	1842

Okmulgee County

Kirkland et al.	6	CNL SW SE NW 17-15-13 E	1366-1414	7
Grubbs et al.	1	NWc SW 12-15-14 E	T.D. 2066	Dry

Osage County

Moore et al.	1	SEc NE 5-26-6 E	T.D. 3385 OWD	Dry
Pueblo	3	NEc SW NW SE 14-21-8 E	T.D. 2419	Dry
Kewanee	4	SEc SW NE 3-26-6 E	2779-2847	172
Parker	3	NWc NE NW 11-26-6 E	2852-2893	750
I. T. I. O.	374	NEc SW NW 1-25-11 E	1731-1780	2½M
I. T. I. O.	34	NWc NE SE 20-25-12 E	1320-1363 OWD	6½M
Mundy	1	CWL SE 36-22-8 E	446-466	50

Pontotoc County

American	3	SEc NE SW 9-4-6 E	1294-1360	25M
Henry et al.	1	SWc NW SE 14-4-7 E	T.D. 1203	Dry

Pottawatomie County

Gypsy	3	SW 9-9-5 E	T.D. 3905	Dry
Magnolia	1	NWc SW NW 13-7-4 E	4344-4347	38
Magnolia	1	SEc NE NE 15-7-4 E	3794-3796	140
Independent et al.	1	SEc NE NE 23-7-4 E	3709-3752	25M
Magnolia	2	NEc NW NE 30-7-4 E	3710-3748	20

Seminole County

Continental	13	SEc NW SE 33-11-8 E	T.D. 4165	100
Carter	2	SWc NE SW 1-9-5 E	4300-4314	1670
Shaffer	1	SWc SE SW 1-9-5 E	4310-4330	97
Barnsdall	2	SWc NE NE 10-9-5 E	4366-4375	825
Gypsy	7	NEc NW SW 10-9-5 E	4348-4364	780
Texas	6	NEc SE NW 10-9-5 E	4388-4398	720
Texas	5	SEc NE SE 10-9-5 E	4307-4315	607
Continental	1	SEc NW 12-9-5 E	4280-4307	300
Magnolia	2	SWc NW NW 12-9-5 E	4268-4303	4146
Mid-Kansas	3	SEc NE NE 14-9-5 E	4385-4391	415
Carter	2	NWc SW 3-9-6 E	4296-4376	30
Carter	8	SWc SE NE 4-9-6 E	4334-4357	60
Magnolia	2	SWc SE NE 10-8-6 E	4060-4100	72
Twin State	2	NWc NE SE 11-8-6 E	4114-4134	565
I. T. I. O.	5	NEc SW SW 13-8-6 E	4372-4382	753
I. T. I. O.	3	SEc NW SW 13-8-6 E	4315-4324	1082
I. T. I. O.	4	NEc NW SW 13-8-6 E	4099-4119	1162
I. T. I. O.	5	SWc SE NW 13-8-6 E	4193-4210	683
Roxana	6	NWc NE NE 16-8-6 E	4250-4360	40
I. T. I. O.	5	NEc SE NW 22-8-6 E	4316-4330	161
I. T. I. O.	11	NWc SW NE 22-8-6 E	4219-4239	108
Gypsy	3	SEc SW NW 23-8-6 E	4225-4328	47
Blackwell	3	NWc SE SE 35-8-6 E	4382-4385	700
Blackwell	8	NEc SE 35-8-6 E	4371-4376	1455
Continental	2	SWc SE NW 36-8-6 E	4198-4212	1450
Mid-Continent	7	NEc SE SW 36-8-6 E	4285-4291	1000
I. T. I. O.	3	NEc SW NW 1-7-6 E	4175-4179	2411
Superior	1	NWc SE NE 1-7-6 E	4183-4203	200
Tidal	1	NEc NW NW 1-7-6 E	4107-4113	1635
I. T. I. O.	8	NEc NW NE 2-7-6 E	4288-4293	1142
Philmack et al.	1	NEc SW SE 2-7-6 E	4275-4280	840
Prairie	6	NEc SW SE 11-8-6 E	4088-4105	770
Prairie	4	NEc NW SE 2-7-6 E	4285-5286	788
Red Bank	1	SWc NW NE 1-9-5 E	T.D. 4480	Dry
Gypsy	5	SWc SE NW 11-9-5 E	T.D. 4508	Dry
Magnolia	8	SEc SW SW 11-9-5 E	T.D. 4300	Dry
Amerada	1	NEc SE 4-9-6 E	T.D. 2980	Dry
Barnsdall	1	SEc NW 2-7-6 E	T.D. 4453	Dry
I. T. I. O.	4	SWc NE 2-7-6 E	T.D. 4475	Dry

Stephens County

Winkler et al.	1	C SW NE 29-1-6 W	T.D. 3012	Dry
Magnolia	2	NWc SW 29-1-9 W	2166-2177	6M

Tulsa County

Glidden	3	SEc SW NE 34-19-13 E	512-518	¼M
Savoy	1	NEc SW 8-16-14 E	1958-1962	25
Transcontinental	1	NWc SE 8-16-14 E	1964-1968	30

Waggoner County

Martin et al.	1	NEc SE SE 34-18-16 E	T.D. 1175	Dry

KANSAS

Butler County

Patton et al.	1	SWc 27-27-6 E	3063-3069	125

Cowley County

Lewis et al.	1	SEc NW NW 25-34-6 E	3015-3048	15

Elk County

Conley et al.	1	NWc SW SW 3-30-9 E	2306-2328	75
Elmwood et al.	1	SEc 15-30-10 E	1992-2009	100
Union	3	NEc SW SW SE 11-31-10 E	1122-1135	2M
Byington et al.	1	CSL SE SW 15-31-11 E	1860-1880	15

Greenwood County

Manhattan	4	SWc 2-22-10 E	2067-2142	200
Polhamus et al.	6	NEc SE SW SW 35-25-10 E	2015-2027	25
Polhamus et al.	1	NWc NE NW 2-26-10 E	2007-2029	75
Rogers et al.	1	NWc NE NW NW 2-26-10 E	1957-1987	40
Titus et al.	1	SEc NE SE 17-22-11 E	T.D. 2110	Dry
Connell et al.	1	SWc NW NE 32-22-11 E	T.D. 2050	Dry

Marion County

Cameron et al.	1	NWc NE SW 2-22-3 E	T.D. 2728	Dry

Morris County

Nicols et al.	1	SWc SE 11-17-7 E	1439-1441	1M

Reno County

Findiess et al.	1	SEc SW 8-24-7 W	T.D. 4135	Dry

Sumner County

Roxana	4	SWc SE 24-31-2 E	1853-1905	553
Pickard et al.	1	Lot-11 Blk-35 11-32-2 E	2047-2114	500

(*Continued from Page* 37)

point and lighthouse kerosene have been eliminated.

A new burning test has been provided for long-time burning oil. It provides that the time required to burn 650 c.c. of the oil shall be not less than 120 hours.

Mineral seal-oil, 300 degrees, has had added to it the requirement that it shall be neutral and that the time required to burn 570 c.c. shall be not less than 20 hours.

With respect to gear, chain, and wire-rope lubricant, a change says the ash shall not exceed 0.2 per cent. The flash point has been eliminated.

A new specification covering marine engine oil has been inserted. There is hereafter to be only one grade. It is to cover oil for the lubrication of reciprocating steam engines in marine service. It is to be free from water, mineral acids, alkalies, and asphaltic matter. This grade, however, is not to be used in circulating or forced-feed systems. Its viscosity, at 210 degrees Fahr., shall be within limits of 65 to 70 seconds; flash point not below 345 Fahr. and fire not below 390 Fahr. The flow during the fourteenth day of the test shall be at least 30 per cent of the flow during the second 24-hour period.

There is also a new specification for mineral lubricating grease which heretofore has been called cup grease. This specification covers grades of cup grease used by the government for the lubrication of such parts of motor machinery as are lubricated by means of compression cups, and also for use in ball bearings and roller bearings.

The grease is to be furnished in hard, medium and soft grades. It is to be a smooth, homogeneous mixture of mineral oil and pure odorless lime soap made from animal or vegetable fats or oils, or fatty acids completely saponified with hydrated lime. Soft grease is intended for use in ball or roller bearings, medium and hard grease for use in compression cups for bearings.

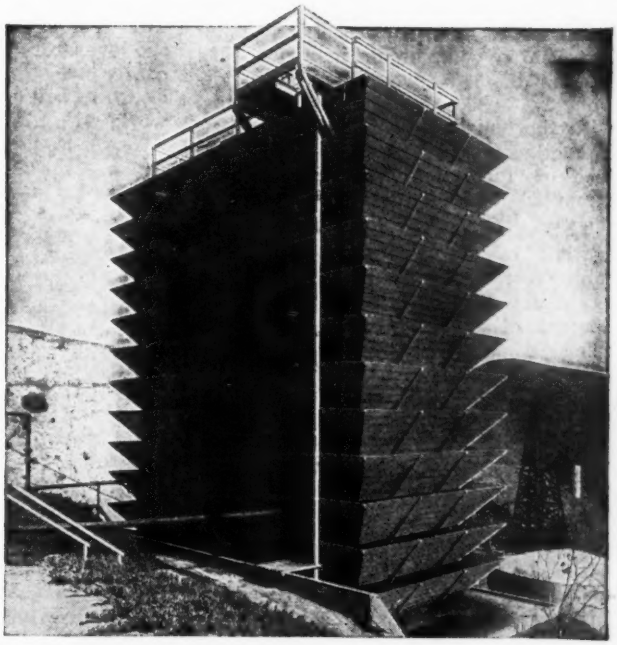
The paper says that for rapid-running machines in cool climates medium grease should be ordered. For hot climates or heavy running machinery hard grease should be ordered generally. The grease is to contain no fillers, such as rosin, rosin oils, talc, wax, powdered mica, sulfur, clay, asbestos, or other undesirable or deleterious impurities, and possess only a slight odor of mineral oil.

There is also a specification for graphite lubricating grease, in the hard, soft and medium grades, containing from 2 to 3 per cent of graphite.

Reading Pipe
"Cheaper in the Long Run"

Birch Oil Company Tries Steel Pipe for a Cooling Tower for 2 months—that's all it lasted

Now They Specify READING



Cooling Tower on the Property of Birch Oil Company

Reading Iron Company,
441 Pacific Mutual Building,
Los Angeles, California.

Gentlemen:

Replying to your inquiry as to the reason for our specifying "Reading Iron Pipe" on our order a short time ago, we beg to advise that this pipe was to be used for cooling coils in our water tower, and our previous experience demonstrated that steel pipe would not withstand certain elements in the water which caused corrosion, whereas, the iron pipe was not affected in the least.

When this cooling tower was built about a year ago, we installed second hand Reading Iron Tubing for coils, and these coils are in just as good condition today as they were when put into operation. About two or three months ago we found it necessary to install additional coils, and as we had no Reading Tubing on hand at the time, we built these of steel tubing which lasted about two months and were replaced with the Reading Iron purchased a short time ago. After about two months service the steel tubing had corroded so bad, that leaks were discovered in many places, and on examination, we found the entire steel installation completely gone.

We also find Reading Iron Tubing an eliminator of trouble in crooked holes where we have had considerable trouble with rod cut tubing. The Iron tubing apparently withstands the abrasive effect caused from continual contact with the rod couplings better than the harder steel tubing.

Although the first cost may be slightly higher, we feel that in many instances the Reading Iron installation will prove cheaper in the long run.

Thanking you for the interest you have shown in our past relationship, and assuring you of our hearty cooperation, we are,

Yours very truly,

BIRCH OIL CO.

J. H. Royer

Superintendent

READING PIPE
GENUINE WROUGHT IRON

READING IRON COMPANY HOUSTON, TULSA, SHREVEPORT, LOS ANGELES READING, PENNSYLVANIA

Pinching in Gas is Under Way In Ventura Ave. Field

LOS ANGELES, Oct. 29

THE indicated increase in production at Long Beach the coming few months and the holding up of production at Ventura Avenue in the face of pinching in of both oil and gas were the centers of interest in production circles in California during the past week.

Richfield Oil Co.'s Booth 8 at Long Beach was completed for about 5000 barrels of 31.5 gravity oil in addition to 3,000,000 cubic feet of gas, with bottom of hole at 5950 feet. The oil and gas is coming from 700 feet of formation, with last string cemented at 5250 feet.

The gas has a natural gasoline content of 5 gallons to the 1000 cubic feet, being about the richest gas from a new well in California. Several other fairly good wells are being completed in what is now known as as the Richfield sand at Long Beach, and the prediction is freely being made that, for the next few weeks at least, Long Beach production will exceed 100,000 barrels a day, as about 40 wells should be drilled into this deeper sand during the coming 90 days.

The Long Beach is proving to be one of the best fields in California. The first well was completed in this field late in 1921, and to Oct. 1 the field had produced almost 251,000,000 barrels of oil, with indications that it is not near the end yet. There are 950 producing wells in this field, with 95 former producers idle and 48 wells are off production to be drilled deeper or cleaned out.

The oil companies operating at Ventura avenue started operations Oct. 25 looking to the pinching in of 25,000,000 cubic feet of gas as was planned when Gov. Young announced his plan to name a committee to study "wastage" of gas in California fields. Not all of the 25,000,000 cubic feet were closed in during the week and the process will not be completed until next week. Until then it is impossible to tell exactly the amount of oil that will be shut in. It is estimated that about 3000 barrels were shut in this week, and the total of shut in oil next week will likely run between 4000 and 5000 barrels, daily production.

Petroleum Securities' Orton 3 at Ventura Avenue, was completed Oct. 21 for 5200 barrels of oil at 6223 feet, and the oil is comparatively clean. It is also making 3,000,000 cubic feet, and the casing pressure was 1150 pounds. This well is located on the flats and for a time it had been thought this tract was on the edge. The completion of such a well on what had been thought to be the edge of the structure indicates other good wells may be expected on this side of the field.

The California Railroad Commission this week selected Wm. J. Carr, the Pasadena member of the commission, to represent that organization on the governor's gas conservation committee, announced last week. This committee is expected to ask the operators during the week for a conference, and it is thought the operators will name a committee to work with the governor's body. The governor hopes the state committee can assist the oil operators work out some feasable plan for the conservation of gas in the state.

The operators are voluntarily acting to save as much gas as possible. All gas produced is being stripped of its natural gasoline content, but the commercial gas companies are not in a position to make use of all of the dry gas offered them. Just what the action will lead or what it can lead to is not yet clear.

Associated Oil Co.'s wildcat at Potrero near Los Angeles, between Inglewood and Rosecrans, has also been killed and will be drilled deeper. This well produced some oil, but water appeared, making it necessary to recement.

A. P. I. Now Assembling Group Order for Gages

HOUSTON, Oct. 27

CONFORMING to the recommendations of the special American Petroleum Institute committee on the standardization of rotary drilling equipment, the Institute is assisting now in assembling a group order for the purchase of the necessary master gages for rotary drilling taper joints.

The purpose of this order, it is explained by Carl A. Young, standardization director at Dallas, is to obtain the best possible price and, at the same time, supply the necessary grand masters and regional grand master gages to maintain interchangeability.

"In order to make these standards 100 per cent effective," says Mr. Young," we are anxious to get in touch with any oil companies or manufacturers who might be interested in the purchase of these gages. Principal manufacturers and many of the larger oil companies have already placed their orders. It is possible that there may be some shops, or oil companies, that still may be interested. The closing date of this group order has been extended to Nov. 15, next, It is necessary, therefore, that anyone desiring to participate must have their orders in on or before that date."

Grand master gages will be deposited with the Bureau of Standards at Washington to be used only in cases of dispute and the three regional grand master gages will be deposited with officially appointed A.I.P. custodians in the eastern, Mid-Continent and Pacific coast districts, similar in manner in which the gages for cable drilling tool joints were handled.

Standard sizes adopted by the committee include all threaded taper joints from the swivel coupling to the fish tail bit shank, as follows:

Pipe Size of Drill	Nominal Size of Taper Joint
2-⅜"	1-⅞x2-⅝ -5
2-⅞"	2-⅛x3 -5
3-½"	2-$\frac{9}{16}$x3-½-5
4-½"	3-$\frac{9}{16}$x4-⅝-5
5-$\frac{9}{16}$"	4-½x5-½ -4
6-⅝"	5 x 6 - 4
8-⅝"	7 x 8 - 4

Mr. Young announces that the following have already placed their orders for gages and have been licensed to use the A. P. I. monogram:

Acme Fishing Tool Company, Parkersburg, W. Va. (R. H. gages only)
Baker Casing Shoe Company, P. O. Box L, Huntington Park, Calif. (R. H. gages only)
Beaumont Iron Works, Beaumont, Texas. (R. H. & L. H. gages)
Emsco Derrick & Equipment Co., 6811 So. Alamelia St., Los Angeles, Calif. (R. H. gages only)
Guiberson Corp., Dallas, Texas. (R. H. gages only)
Hinderliter Tool Co., Tulsa, Okla. (R. H. & L. H. gages)
Hughes Tool Co., Houston, Texas. (R. H. & L. H. gages)
National Supply Co. of Penn., Carnegie, Pa. (R. H. & L. H. gages)
National Supply Co., Toledo, Ohio. (R. H. & L. H. gages)
Oil Well Engineering Co. Ltd., 8-10 Bridge St., New York City. (R. H. & L. H. gages)
Oil Well Supply Co., Pittsburgh, Pa. (R. H. & L. H. gages)
Reed Roller Bit Co., Houston, Texas. (R. H. gages only)
H. C. Smith Mfg. Co., Whittier, Calif. (R. H. gages only)
Standard Oil Co. of Calif., San Francisco, Calif. (R. H. gages only)
Union Oil Co. of Calif., Los Angeles, Calif. (R. H. gages only)
Union Tool Co., Torrance, Calif. (R. H. & L. H. gages)
U. S. Tool Co. Inc., 3303 Cherry Ave., Long Beach, Calif. (R. H. gages only)
Vickers, Ltd., 1123 Equitable Bldg., New York City. (R. H. & L. H. gages)

The following companies have either placed their orders or have indicated their desire to be included in the group order but, at this writing, have not as yet been licensed to use the A. P. I. monogram:

American Steel Export Company, New York City.
General Petroleum Corporation, Los Angeles, Calif.
Grant Oil Tool Company, Los Angeles, Calif.
Lucey Mfg. Corp., Chattanooga, Tenn.
Neal Lucey Company, Houston, Texas.
Oil City Iron Works, Shreveport, La.
Titusville Forge Company, Titusville, Pa.

Merger in I.O.M.A. Group Predicted; Nicholas to Quit Office

By Ward K. Halbert
N. P. N. STAFF WRITER

CHICAGO, Oct. 27

INDEPENDENT Oil Men of America are cultivating an organization spirit through co-operative advertising and merchandising which their leaders acknowledge may ultimately merge them into a huge consolidation.

This statement was made by Harry Brownell of the Brownell Oil Corp., Sioux Falls, S. D., in an address before the national convention of I.O.M.A. at the Congress Hotel, Chicago, Oct. 24, 25 and 26.

Mr. Brownell's suggestion that the I.O.M.A. might some day be a big, integrated company instead of a trade association did not seem to strike the membership as a new idea. His talk was given prolonged applause and enlarged upon by subsequent speakers including E. H. Hilpp, Kentucky Consumers Oil Co., Louisville, chairman of the board. To many of the visitors, however, the development was new, especially when President L. V. Nicholas, stated that the organization already was working on a preliminary capital set-up.

There were three big developments in the meeting, one every day. The first was, when Mr. Nicholas stated positively that he would not remain in office after next March when his term expires.

The directors evinced no surprise at Mr. Nicholas' announcement. Some of them stated that he and Col. Hilpp both had taken their offices last March with a promise they would serve only one year.

Two questions occupied the minds of the members the rest of the day; what will the I. O. M. A. do? and what will Mr. Nicholas do?

Mr. Nicholas stated, in answer to the first question, that the organization had developed to such strength and unity that it could manage its affairs without his guidance. He did not divulge his personal plans.

Another big development took place the last day of the convention, Oct. 26, after W. G. Leamon, inventor of "Stellarene" had told the jobbers about his process which produces a motor fuel of high anti-knock value. With his assurance that he could provide them a product that would be an honest competitor to Ethyl gasoline, I.O.M.A. members promised Mr. Leamon a market for enough material to justify a refiner to install two "Stellarene" units.

The convention was not like other jobbers' meetings. It was a business conference of a group of men interested in a common enterprise. Every speaker got down to the proverbial "brass tacks" and talked about methods of financial improvement; how to increase volume, profits and good will, and how to strengthen the position in the industry held by the individual members.

Some of the addresses were long and went into the intimate details of marketing activities but interest never lagged. The whole tone of the convention was closer allegiance by members to one another, not as a class, but as a group, banded together for business reasons, getting more business and saving more money collectively than they could individually.

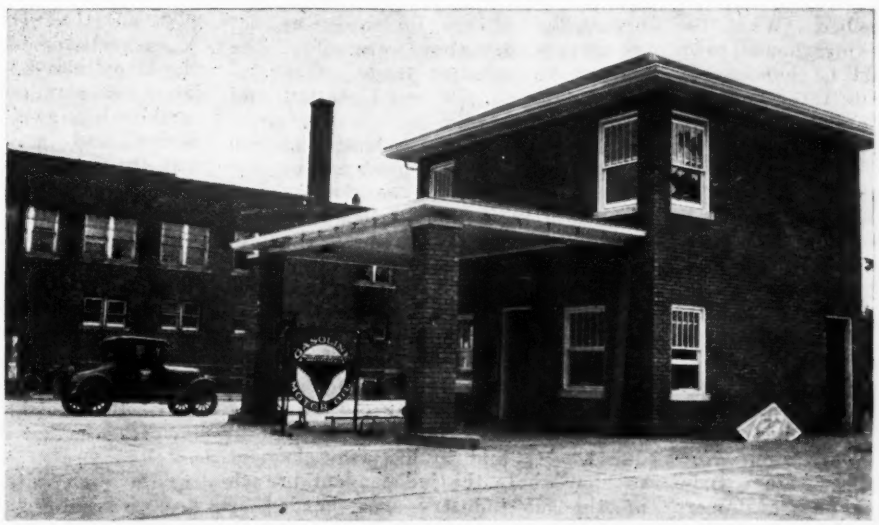
Members were urged to buy their supplies from refiners who are members; to make their stations more uniform in appearance; to increase the use of their mutual emblem, the Spread Red Eagle; to standardize their service and products more completely, and to present continuity to the motoring public in appearance and in fact.

Col. Hilpp made the only strictly organization talk in his address of welcome, the first afternoon. He recounted the history of the group movement among Independent oil men since it started, and no oil man in the house could boast any more active years as an independent jobber than he. He closed with the assertion that a membership in the I.O.M.A. would be worth $2500 in two years.

President Nicholas followed the chairman with a short chapter of more recent history, before he delved into problems at hand. He started with that day in Kansas City about six years ago when the idea of mutual advertising was first suggested to members of the National Petroleum Marketers Association. From there he told of events leading up to the incorporation of I.O.M.A. in 1924, launching of a national advertising campaign in 1925, and the consolidation early in 1927.

"The progress of a group is slow but irresistible," Mr. Nicholas said. "In building a worthy structure, more time is spent in getting down to bedrock and laying a substantial foundation below grade than in building many stories above the ground. The ground work of the I.O.M.A. is laid and the time has come when its members should begin to realize profits on their investment. And their monthly checks to I.O.M.A. are not 'dues' but investment in future stability."

Mr. Nicholas devoted most of his talk to timely needs of the organization. He pointed out the importance of getting new members into the organization, the more thoroughly to placard the country with Spread Red Eagle signs and give it universal recognition among motorists. He pleaded with the oil men to sacrifice their own temporary and private advantages



How the Spread Red Eagle of the Independent Oil Men of America is displayed at the new station of the Diamond Kerosene Co. at Carbonville, Ill. Photo was taken while station was still under construction, but the independent insignia was out

to the furtherance of the movement, and to stop internal bickerings. Finally he insisted that they buy their supplies from the four refinery members as far as possible; adding that a survey in 1926 showed that 289 I.O.M.A. members answering a questionnaire had 189 sources of supply.

JOHN McE. AMES, president of Kanotex Refining Co., Arkansas City, Kan., one of the refinery members, took up the same subject where Mr. Nicholas left off. He emphasized the interdependence of the Independent jobber and the Independent refiner. He recommended that more refiners be taken into the I.O.M.A., for two reasons. First, the jobber members in the east can not patronize the present refinery members, whose plants are in the west and, second, because the combined output of the four plants in question amounts to 65 cars of gasoline a day, 15 of which is pressure gasoline, an amount which will not nearly meet the demands of the jobber members.

"Tendency on the part of refiners to go into the retail business has left only a few who are not competitors to their jobber customers," Mr. Ames pointed out. "Every car of oil or gasoline bought from a retailing refiner tends to strengthen his position in the industry, and every car taken from a refiner who does not retail brings him that much nearer the point where he will be obliged to build filling stations for self preservation.

"If refiners continue to enter the marketing business at the present rate, in 1930 there will be no more non-retailing refiners. If a jobber wishes to retain his own identity, and the identity of his brands he has no choice but to protect his sources of supply. A fair division of profits should be worked out between the refiner and jobber; for as long as the filling station margin is equal to the refiner's profit plus freight, stations will increase in number. What the average station in my home town sells in a year could be handled by a good filling station in three months."

Ray Overholser, assistant to Mr. Nicholas, told of accomplishments by the I.O.M.A. since its organization. "Five years ago there was not a Spread Red Eagle sign up anywhere in the country," he said. "Now they are displayed conspicuously in 2000 towns.

"Nobody had ever heard of Red Hat gasoline then. Not a drop of it had been sold. Red Hat motor oil had only been thought about by a few persons. National identification for the Independent oil industry was only a dream, five years ago. Now Independent jobbers buy from Independent refiners, they pass customers along to each other when the motoring season puts tourists on the go, and they submit to each other's suggestions and criticism. One filling station has honored I.O.M.A. interchangeable coupons from as many as nine states during the past summer."

Enlarging upon Mr. Overholser's remarks, Bryan S. Reid, president of the Inter Ocean Sales Corp., Riverside, Ill., told how he knew his stations had improved in gallonage as a result of Spread Red Eagle advertising. He quoted cold figures to show the gain.

Mr. Reid illustrated with three filling stations, where a comparison of gallonage was made by months, May to September inclusive, 1927 against 1926. His company entered the I.O.M.A. movement in May 1927.

The first station is in a Chicago suburb on a national highway. It has some local business but more transient trade than stations usually have. "Several things happened between the 1926 and 1927 seasons which might have taken business from this station," Mr. Reid related. "Competitive stations were built nearby, the highway was closed part of the time and there was an appreciable decrease in the traffic to pass the station."

THE only thing to offset these disadvantages was the fact that the station exhibited the Independent emblem in 1927 and the station increased business all through the season. Increase in gallonage over the corresponding month of the previous year ran as follows in 1927:

The increase in May was 4.04 per cent; June 40.14 per cent; July 67.72 per cent; August 72.04 per cent and September 99.34 per cent. In other words, business in May 1927 was about like May 1926 but during that month Spread Red Eagle signs went up. The increase was abrupt and continued, growing until September gallonage this year nearly doubled September last year, in spite of increased competition and diminished traffic.

The other stations had similar experiences, but the increase was not so marked, for they were off of the stream of transient trade. One station, which was a good station and a money maker in 1926, was situated in the heart of a residential section and depended on it almost wholely for its patronage. That station started out with new competition in May 1927 and did less business than in May 1926 but the loss was regained after the emblem went up and the average monthly gain for the season was 7.23 per cent.

Mr. Brownell was booked on the convention program as a mystery speaker. The gathering did not know who it would be until he was introduced. He told in his own eloquent fashion where the independent branch of the oil industry was headed if something was not done to give it national identification. His remarks were based on observations made on a 2000-mile motor trip this summer.

"One fifth of our business in most towns is transient business," Mr. Brownell quoted from an un-named statistician. "We all admit that we are the best marketers in our home towns. We can sell the folks at home if we can keep them at home, but they won't stay. They *will* get out and run around about two months of the year and they do not buy from us while they are away.

"When they get into a strange community they buy at the familiar old sign of the Red Crown or Red Star or Yellow Shell and they find out it is pretty good gasoline. So when they come home they forget to quit. Some of them never come back to us at all. From the looks of the Independent stations I saw on my journey this summer, I do not see any reason for a tourist buying at an Independent station. Some of them were awful. What we must have, in order to hold that 20 per cent of our business, is national representation.

Theodore A. Peck, lubrication engineer for I.O.M.A., talked about Red Hat motor oil at one session. He predicted that the present countless brands of motor oil in the United States would some day be greatly reduced, because the pressure of national advertising of the better known brands of oil is gradually taking away patronage from the products that are only locally known.

"More than half the cars now being turned out in the United States have Red Hat motor oil recommended for them by their manufacturers, along with other approved brands", Col. Peck said. "Among the manufacturers who have placed Red Hat on their approved list is the General Motors group." Toward the end of his talk Col. Peck said, "We have sold a few thousand barrels of Red Hat motor oil already and I have never seen a complaint on it yet."

C. Y. HINCHIE, head of the advertising department of I. O. M. A. discussed his part of the work from the standpoint of creating and establishing good will. Continuity of design and multiplicity of display was the principle he emphasized most, telling the jobbers that no formula was possible for erecting signs at a station, each location being an individual problem. O. F. Schully, publicity man for I.O.M.A. told the members where industrial news fitted into their scheme of publicity in their home towns, and something of how to get such news published.

H. B. Floyd, a Chicago patent lawyer, who has carried the Red Hat vs. Red Crown case to victory thus far in the United States patent office, was the last speaker on the program except Mr. Leamon whose address is discussed elsewhere in this issue.

Rerunning, Much Reduced, Still Has Place in Refinery Schedule

By D. F. Gerstenberger

Article 6

RERUN stills have many and varied uses. For general classification, any still which takes a product of some previous distillation, and further distills it may be termed a rerun still. This refers to all products such as naphtha, kerosene, gas oil, lubricating and light residues.

For naphtha and kerosene, the steam still was once considered as ideal finishing equipment. Its cost of operation was high but profits were large and sufficient to cover the operation. It was felt that a steam finished product was far superior to any other and consequently this method of final distillation held sway.

The distillation was accomplished by bubbling steam through the oil, causing the double effect of carrying over fractions by actual steam velocity, and distilling at low temperatures as a result of partial pressures created by this method of distillation.

Consequently, even with low temperature steam, a product with a final boiling point, considerably higher than the temperature of the steam was obtained.

As the margin of profit decreased vapor to oil exchangers were added, as a means of helping to supply some of the necessary heat for the distillation, thereby cutting down considerably on the amount of steam required. The continued need for more efficient equipment, finally gave rise, however, to the use of fire in combination with the steam, and any prejudice in favor of the steam still was finally overruled, so that today the common method of finishing gasoline and kerosene is that employed by the ordinary steam and fire distillation.

Rerunning at one time made up a big part of the average refinery operation. Practically every operation made a certain amount of so-called rerun stock. Even the rerun operations themselves added their amount to this orphan product which must be rehandled time and again before its fractions were finally properly divided. Between each individual product was a stock containing fractions of the one preceding and the one following in the distillation, and this stock was cut to rerun for further separation and fractionation.

It can well be imagined that some of these fractions were handled perhaps a dozen times or more before they finally found their way to the product where they belonged. This practice, if followed extensively today would be disastrous, yet it has been but a few years since the advent of the bubble tower eliminated such a costly procedure.

A crude battery properly equipped with bubble towers can fractionate its own products very close to their respective specifications. Yet due to the fact that so many of the naphthas and kerosenes need chemical treatment, the rerun still plays its part in the general plan of refinery operation. Likewise most of the distillates obtained from the cracking operations need treatment and rerunning, some of them double rerunning.

In view of the fact that the largest part of our rerunning equipment is constructed to handle light products we will deal mostly with this kind of equipment and its attendant operation. Other operations can be handled more or less along the same method.

FOR stocks that need a double rerun, which usually come only from the cracking operation, the stills for the initial operation will be slightly different in construction from those for the final distillation. As a concrete example, let us assume that we have 8000 barrels of distillate per day to handle through such stills. A battery of five 1000-barrel stills should handle this amount, assuming that the distillate is well fractionated and carries about 20 to 25 per cent of bottoms. The first three stills will be manifolded together with one large vapor header, which in turn will lead to condensing and cooling surface of ample capacity.

The vapor manifold takes care of the excessive amount of fixed gas carried in the distillate, which otherwise would crowd the first still and might interfere with the proper flowing of the oil from still to still. We will feed into the first still, or if desired, the first two. The feed will exchange heat with the vapors from the first three, and if desirable with exhaust steam, prior to the exchange with the vapor, and then with the bottoms, prior to entering the stills.

The fourth and fifth stills will be equipped with suitable bubble towers, and the oil from the third still will be transferred by hot pump or steam lift, to the center plate of the bubble tower of the fourth still. Like transfer will occur from the bottoms of the fourth still to the bubble tower of the fifth still.

The bubble still towers will be maintained to a certain vapor outlet temperature by water cooled sections, or by direct water spray, which will take care of the necessary reflux on the upper plates, thereby making the entire tower effective. The over-head naphtha is fractioned to contain about 10 per cent of bottoms, and the end-point of this naphtha should be the same as or lower than the initial boiling point of the bottoms.

The second rerun will be accomplished by three stills using fire and steam. They will each be equipped with suitable bubble towers and as in the first rerun the feed will pass through proper heat exchangers and will be sprayed to the first bubble tower. The bottoms from the first still will be transferred to the center plate of the bubble tower of the second still, and like transfer will occur of the bottoms from the second still to the middle plate of the third still tower.

This method of operation always insures a maximum yield of overhead. The bubble tower stills should be able to remove just as much gasoline from a naphtha, as is possible by careful distillation in the laboratory with a column still.

Again, the initial boiling point of the bottoms should be about the same as or higher than the end point of the gasoline, if your equipment is working satisfactorily; in fact, with proper equipment, and good operation, it has been possible to maintain a considerable gap between these two points. The writer has seen a crude operation with properly constructed bubble towers where the gasoline ran 437 end point and the initial boiling point of the kerosene which was the following cut, ran 446.

THE transfer method is favored as compared with simply flowing the oil from still to still. To begin with, spraying the oil over the bubble tower of the still following, gives better fractionation and keeps the lighter ends out of the still itself. Second, there is not the opportunity for the oil in one still to flow rapidly over to the next still, thereby up-

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WESTERN Oil & Refining, Los Angeles is using two Sweetland Filters—one on gasoline, the other on kerosene.

Ask them what they think of Sweetland Filters in connection with the contact process.

We can furnish you with new Sweetland Filters—single units or in batteries.

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setting the entire operation for a period of time, which condition is frequently caused by a sudden pressure change on any one of the stills of a continuous battery.

Consequently, where the transfer method is used, it is possible to maintain a good bottom in all the stills at all times, and the initial boiling point of the bottoms in the tail still can be controlled to keep it free of naphtha, which means maximum yields. The writer has seen an increase of from 2 to 3 per cent in gasoline yield accomplished by simply changing from the flow method to the transfer method.

ON ALL finishing operations, the laboratory should run a sufficient number of control distillations to enable the operators to run the overhead quite close to the limit of the specifications. Distillations of stream and tank samples at least once every eight hours or oftener if deemed necessary, prove helpful to maximum yields and efficient operation.

The operation of stills by stream gravity only has had its day. Definite yields are impossible by this method, and 1 per cent on the yield statement means too much to feel that such a method is good enough.

The principles of good boiler practice should be followed in the construction of still settings. The stills should set well up to allow for ample combustion space, so that they may be forced when desired without injury to the still bottom. The use of fire brick muffles for firing makes a fire-box of beautiful appearance even under extreme conditions, and leads to heat economy as well as protecting the bottom from flame impingement.

Operations for other than finishing naphthas can be modeled after the one outlined for the second rerun. There is no use in trying to give proper temperatures for best operation of stills so handled, for each stock will require different temperatures for best results. Also a great deal will depend on vapor velocity, and the capacity of the stills.

We are sometimes face to face with the fact that we need equipment for rerunning purposes, and either it is felt that any such construction must be of an extremely economical nature, or else there is not a sufficient amount of time available to build extensive equipment. For such conditions, the ordinary oil field boiler, together with a few other pieces of standard equipment may be converted into rerunning equipment with no small amount of success.

A small fire-box with open top is constructed, about 24 inches high, and of suitable size so that the mud ring of the boiler will set nicely on

the four side walls. The burner is set in the back of the fire-box, so that the heat and flames are compelled to turn back, after passing upward into the internal fire-box of the boiler, in order to pass through the flues. In other words, the boiler is back-fired.

A vapor separator, 8 by 10 feet will suffice and it is set on end at a sufficient height so that when the oil in it is at a level equal to half the capacity of the separator it will flow into the boiler through the flow line which will be mentioned later.

Over this separator is mounted a bubble tower of sufficient capacity to take care of the vapors and the steam.

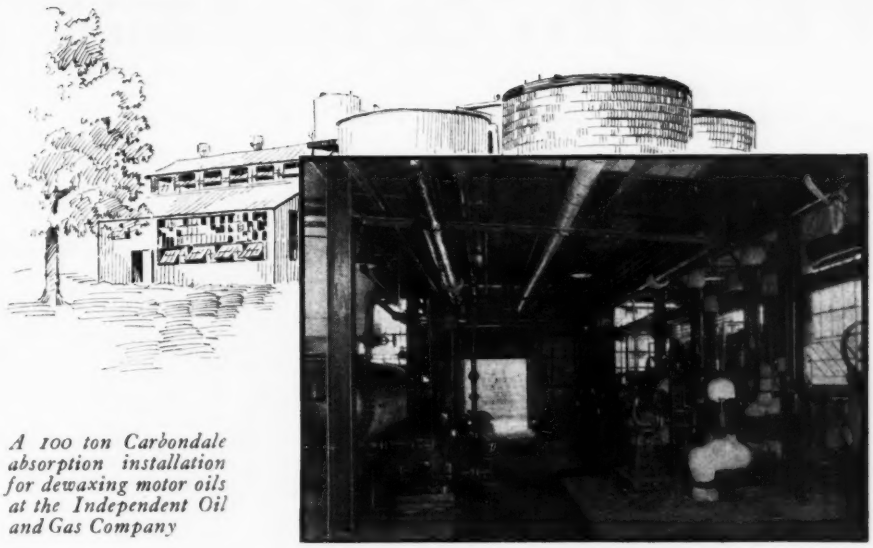
The oil flows from the separator to the boiler through a flow line which enters the boiler on the smoke stack end at a level which will well cover the crown sheet and flues. Out of the steam dome of the boiler, runs a vapor line, which enters the separator above the high level of the oil. Steam is introduced into the boiler by means of a single perforated steam spray pipe, and a sufficient quantity of steam is used to simply insure a continual agitation of the oil, thereby aiding the heat transfer and reducing somewhat the vaporization temperature.

The separator is equipped with a perforated spider for the introduction of the amount of steam desired. The bottoms are pumped from the mud drum at the front end of the boiler. Direct water spray in the top of the bubble tower provides a means of maintaining the vapor temperature as well as making the upper plates effective.

If heat exchangers are available, the feed exchanges heat with the vapors and bottoms, and is sprayed to the bubble tower. The condensate from this tower is refluxed to the separator, and from thence to the boiler. For condensers and coolers, a quick job can be had by installing some one of the standard shell and tube exchangers. These can be followed by a box with cooling sections if desired.

STILLS so erected have a capacity of about 700 barrels per still per day. They can be arranged in batteries of as many as desired and the oil may be transferred from still to still as with the regular rerunning operation. It is not recommended that stills of this type be used for heavier stocks than naphthas, for the higher temperatures may cause expansion strains and some trouble due to leakage.

Rerun operations for kerosene would follow more or less the method outlined for naphtha with regular bubble tower equipment.



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Brazil Has Oil Possibilities But Not for the Present

WASHINGTON, Oct. 27

"ALTHOUGH various superficial examinations of geological structures have been made in Brazil, to determine the possibility of the existence of petroleum deposits, there has never been a competent exploration of the whole country for oil." Carlton Jackson, United States commercial attache at Rio de Janeiro, writes in Commerce Reports. "Such an exploration necessitates the sinking of many test wells, and to do that throughout the several extensive regions in which it is reasonably considered that oil exists would cost many millions of dollars.

"Representatives of several foreign oil-producing companies, nevertheless, have made reconnaissances in two or three districts. So convinced are they of the existence of deposits in commercially profitable quantities that it is reliably reported that some of these companies would be inclined to expend the required funds necessary for a complete exploration if national and State laws and regulations could be so liberalized as to give them a reasonable assurance of obtaining the fruits of their labor. They allege that present restrictions as to areas and as to length of term for which oil lands can be acquired are so unsatisfactory as to discourage them from projects of a serious nature.

"In two regions regarded as favorable by these experts two great anticlines are believed to exist—the first beginning in Maranhão and running south through the length of the state of Goyaz, crossing western Minas Geraes and extending into the states of Sao Paulo and Parana; the other an extension of the already tested fields in northern Bolivia, running northward into the territory of Acre and western Amazonas.

"Mining engineers and other explorers have frequently reported oil and gas seeps in the foothills of the eastern slope of the Andes in these regions, and it is the opinion of a successful American oil producer who has traveled there that practically unlimited deposits of petroleum exist throughout the thousand-mile stretch from northern Bolivia to southern Colombia. The present value of oil in that region is relatively small; the cost of transportation by either river or rail to seaboard would be prohibitive at the current market for petroleum, and the task of constructing pipe lines to either the Atlantic or Pacific would be questionable at present. It may well be, however, that as petroleum reserves in other parts of the world are exhausted the industry will have to use these great deposits in Amazonas, if they exist.

"If the anticline in eastern Brazil exists, as is believed by competent geologists, the problem of transportation would not be so great, since it would be eminently practicable to construct pipe lines either to the tidewater of the Amazon River or to the seaboard of Sao Paulo or Para. Thus the immediate interest of explorations and tests would be in the eastern anticline. Tests so far made in this anticline have had no promising results, but they have consisted of shallow wells located without special reference to geological probabilities. Experience in other South American oil fields has shown that as a rule the richest sands are found at great depths; that is, at 3,000 to 4,500 feet. Thus, the wells that have been sunk, said to have penetrated only a few hundred feet, have little significance in the question of the existence of oil.

"Small pockets of petroleum have been encountered, some near the surface, but negligible in total quantity. The superficial crude thus found was of low gravity and grade, being the residue after the highly volatile elements had been lost by seepage. The formations in the southern part of the country are so broken as to justify the belief that such oil as may have existed has long ago escaped.

"It is probably unfortunate that most of the testing has been confined to these southern regions. While the zone of petroliferous formations extends through as far as Porto Alegre, the great fissuring of structures, accompanied by extensive flows of diabase and basalt, upset the original orderly stratification and permitted the escape of the gas and petroleum that were probably once there in quantity. The strata in the Acre and Amazonas zones are comparatively undisturbed, so it may reasonably be expected that the similar geological formations there still hold their oil.

"The experience of producing companies is that the only way to make sure of the existence or nonexistence of petroleum is to take the best geological indications and then sink a considerable number of wells. For such work, in a new country where transportation is difficult and where every element has to be imported, including skilled labor, the cost of a single well would run into six figures, and the sinking of a sufficient number to probe even a limited area would take millions. Such has been the experience of the companies in Colombia, Peru, and Bolivia. In the first-named republic the company which is now producing the bulk of the petroleum there spent more than $40,000,000 before it exported a barrel of oil, and by that time had sunk over a hundred wells, ranging from 1,800 to 4,500 feet in depth.

"The importance of petroleum development to Brazil is obviously very great. The experience of Colombia indicates the large revenues to be received by the government in case of successful exploitations by concessionaires. Another advantage, more immediate, would be the importation of great sums of foreign money necessary for competent exploration, without considering the industrial advantage of the development of large producing areas."

Production Schedules Cut By Auto Factories

NEW YORK, Oct. 26.—*Automotive Industries* this week said:

Declining production shedules are the rule at the motor car factories. Due to the slackness of the retail market and the rather generous stocks in hands of distributors and dealers in some lines, some manufacturers are winding up their 1927 programs earlier than usual and seizing the opportunity for inventory and plant changes. A few lines are in exceptionally good condition, however, and show little recession from previous levels.

Although total output by the industry is somewhat below the seasonal level the year has been a good one for a majority of manufacturers. In previous years of decline this has not been the case; nearly all participated in the losses. Having got through such a period without serious consequences, the majority are inclined to look forward to 1928 with unusual confidence.

Years of presidential campaigns have never affected the industry adversely; the reverse has usually been true. By the end of this year stocks in the field will be in good condition and with the arrival of the new Ford, it is believed, buying hesitancy will be overcome and all will share in better business.

MALONE, N. Y.—The Raeoil Co. of Malone has recently added three new bulk stations at Lake Placid and Plattsburg, N. Y., which gives it four. It is handling about 14,000 gallons of Tydol gasoline daily, according to R. W. Totman, president.

The company is making deliveries in three ton Reo trucks equipped with 800 gallons. Mr. Yomings, of New York City, has recently joined the company as its representative in northern New York. Mr. Jessen of Schenectady, general manager of the company, is now located at Plattsburg.

R. L. Heaton Heads Bowser's Eastern Division

ROSCOE L. HEATON

FORT WAYNE, Ind., Oct. 31.—Roscoe L. Heaton, who joined S. F. Bowser & Co., Inc., manufacturer of bulk and service station equipment here, in 1909 as clerk in the factory sales department, has been appointed eastern manager, effective Nov. 1, with headquarters at Albany, N. Y.

Within eight years after he joined the company, Mr. Heaton was made assistant to the factory manager and in 1917 was promoted to chief clerk to the general manager.

In 1921 he became assistant to the general manager and a year later was appointed advertising manager. This year Mr. Heaton was promoted to assistant sales manager. Mr. Heaton will move his wife and two daughters to Albany.

"Sharon" Is Atlantic's New Tanker

SCHENECTADY, N. Y.—The second tanker of the three the Atlantic Refining Co., Philadelphia, is having converted into Diesel-electric tankers, was completed and given its trial during the week of Oct. 17, according to the General Electric Co. here.

It is called the "Sharon" and was purchased from the U. S. Shipping Board. It is now on its way from Mobile to Beaumont, Tex. The tanker is fitted with electric auxiliaries, all of which are driven by General Electric motors.

LOUISVILLE, Ky.—Stoll Oil Refining Co. has just completed a service station at Carrolton, Ky. It is now building one at the corner of First and Market Sts. at Louisville.

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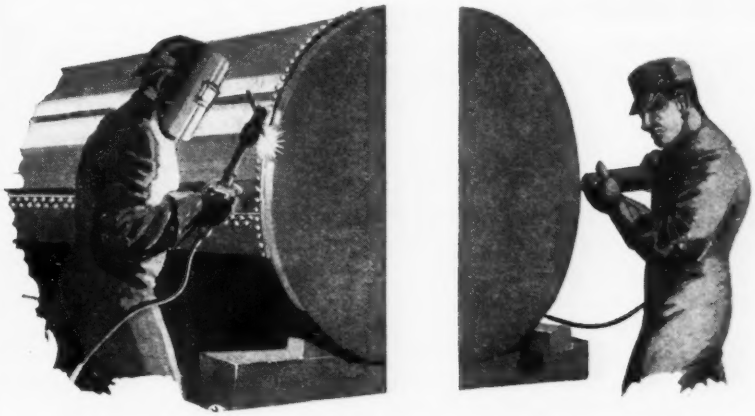

Pride of Craft

The various craft guilds, once the stronghold of the handicrafts, have gone the way of the-divine-right-of-kings, the crinoline and the mustache-cup. They are as dead as the old smocked artificers that drank their nut brown ale in the meeting halls. ¶It was the machine tool that rang the knell of their departing day and laid them quietly to rest . . . the machine tool with its deathly impersonality and precision. And when they were gone *there was* a loss. Workers lost their cunning and their *pride of craft*. ¶At Sistersville *pride of craft* has been reborn and every man among us has it to a large degree. It is one of the greatest factors in our production of *honor-bound tanks*. It is written in the driving of each rivet and the placing of every weld. It means much to us, *it cannot mean less to you*.

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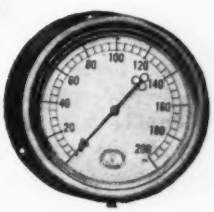

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The Editors' Viewpoint

National Petroleum News

How is Gasoline Tax Spent?

WE HAVE plenty of figures as to the amounts collected through the state gasoline taxes. The total for 1927 will run over $240,000,000, it is likely. Nearly a quarter billion dollars, a fine phrase to roll off the tongue. Last year it was close to $190,000,000.

What we need now are some figures that will show just how much of this vast sum was actually spent on road construction and improvement work, and how much went into red tape or was diverted to other uses.

When state legislators in some states are asked this winter to increase the amount of the tax by another cent a gallon, as will certainly be attempted, they should have the judgment and backbone to demand full reports from state, county and local authorities who have had the tax funds in their charge as to just how many thousand feet, or miles, of new pavement were built and how many miles of roads were repaired with funds already collected.

Road building and repair were the sole purpose for which the gasoline tax was imposed, the public was told when the taxes first were levied. With the funds from automobile license fees that go to road improvement work, and the funds the national government spends on road improvement, it is a fair question if there is not now provided, except perhaps in a few states, all the funds that can be reasonably used in road improvement work. Yet the politicians will be out asking for a higher tax.

The longer the gasoline tax stands and the more it amounts to, the easier it will become for part of it to be diverted to other purposes. Then the oil industry will stand in the unique position of being the only industry singled out for a special tax to help defray the general cost of government. A month ago the oil inspectors of many states met in Columbus, O., and drew up an ambitious platform of activity for state inspection departments. Where would the cost of all that be met except from receipts under the gasoline tax. That's just one move of those hungry for public jobs to get their feet into the feed trough into which the gasoline tax receipts flow.

The local oil man might well inquire around as to the disbursement of gasoline tax funds in his particulr territory. He might find some rare and unusual kinds of road construction and improvement work going on.—V.B.G.

Call It Competition!

CONSIDERABLE has been said in and outside the oil industry about duplication, particularly in the marketing division.

Why not call it what it is—competition!

One can't have competition without duplication. There may be a question as to the value of some types of competition and hence of some of the duplication, but the minute one undertakes to sit in judgment upon the extent of duplication, he, at the same time, is sitting in judgment on the extent and degree of competition.

The government prosecuted probably the world's greatest law-suit and many states did likewise to insure competition in the oil business. All our laws aim to maintain and, if you please, protect competition. The public cries loudly for competition—in fact, the public today is still crying loudly for competition in the oil industry, not recognizing it under the name of duplication.

Let's call it what it is—competition, that the public may see the merits of it—W. C. P.

What Benefit to the Public?

MAURICE WOLFE, motor car manufacturer of Piqua, O., and operator of a string of low-priced gasoline stations, is considerably concerned that the public needs protection in its gasoline buying, as to both price and quality. He believes that this protection would be brought about by posting the gravity, initial and final boiling points of gasoline sold at every pump and meter where it is dispensed.

He has had an ordinance requiring this passed in Piqua, which ordinance is being tested in court by the Standard Oil Co., and he proposes to introduce into the Ohio legislature at its next session a smilar bill applying state-wide.

The only yardstick to put up against proposed new laws is, will they benefit the public by and large, and will the accruing benefits be greater than the cost of enforcing the proposed legislation? What benefit will the public get from Mr. Wolfe's ordinance, whether applying in Piqua, or state-wide?

Will they buy their gasoline at lower prices, or will they get a better product for the same money?

The public knows—and they do not have to spend much money to find it out—that they can get just as good gasoline as some other oil companies are selling, at a lower price at Wolfe's stations if they want to go these for it. They know that sometimes they can buy the same grade of gasoline at another oil company station near one of Wolfe's stations cheaper than they can buy it at stations of that oil company that do not feel so strongly the competition of Wolfe's station.

The public undoubtedly knows, too, that it can buy a so-called "competitive" grade of gasoline selling at the price Wolfe gets at his stations that runs in their cars as well as the oil company's standard product costing more. Isn't this all something that the public's buying sagacity can be depended upon to determine alone, as it does with other lines of merchandise? Are the results secured from using different grades of gasoline in a car so vague and intangible that the motorist cannot tell for himself and must have a law to tell him which gasoline he should pay the most for and which grade he should pay the least?

When it comes to such a statute being a protection as regards quality, it is quite likely to prove the reverse, if the gravity, initial and final boiling points are taken as the points of quality to be posted on the pump. Already volatility and anti-knock qualities are becoming looked upon as the qualities most desired in motor gasoline today. True, we have no standard for anti-knock, and not one that can be easily passed on to the public

POOR LITTLE ORPHANT HENRY

on volatility. But both those qualities are present in gasolines sold today, and the public realizes that without a law on the subject. Such specifications as Mr. Wolfe seeks to have posted would emphasize points regarding motor fuel quality which are less important, but which would be assumed by the public as being of the greatest importance of all tests.

It is a matter of government record that motor fuel quality has been steadily improving the last several years because of the high degree of competition in the industry which competition is keener today than ever before.—V. B. G.

Suggestion for Executives

ONE of the criticisms which we have directed to oil company executives, and we think justly, is that they are not thoroly familiar with the point of view of those with whom and through whom they are doing business. The heads of companies with marketing interests, for the most part, are getting their information on marketing conditions very largely through their own organizations. The reports necessarily must be boiled down to an almost uninteresting set of opinions, facts or only bare particulars.

How much better would it be for the oil industry if the heads of these companies could follow the plan adopted by Alfred P. Sloan, Jr., president of the General Motors Corp., who has recently visited, not only his own eight branches, but dealers in practically every city in the United States, in order to get the facts as to their distribution and the condition of the markets.

Needless to say, Mr. Sloan not only got facts but his visit to the dealers must have been of great assistance to the sales department. Any time the president of as large an organization as his comes down to the men through whom they are selling they are not only complimenting those men but doing much to strengthen their sales virility.

Oil company executives may argue they are too busy. Mr. Sloan certainly is entitled to make the same argument, as his company outranks all except one or two of the oil companies, but read what Mr. Sloan says of these visits.

"It has taken weeks and weeks," he stated, "of the hardest kind of work and continual travel to accomplish this result. I wish my duties were such that I could do more of it, and I am trying to arrange my affairs so that I can. In these trips I visit from five to ten dealers per day. I meet them in their own places of business, talk with them across their own desks and solicit from them suggestions and criticisms as to their relations with the corporation; the character of the product; the corporation's policies; the trend of the consumer demand; their viewpoint as to the future, and many other things that such a contact makes possible.

"I solicit criticisms of everything and anything. I make careful notes of all points that come up that are worth while, and, when I get back home, I study and develop those points and capitalize them so far as possible. The reason for all this is, that irrespective of how efficient our contact through our regular organizations may be, our men in the field are charged with doing specific things and that takes all their time and effort. I go out from the standpoint of general policies and get the facts in a very personal way without the intermediary of an organization which is apt to overlook the most important points and inject their own personal viewpoint on such points as they do get."

Walking Beam Not a True Beam, Engineering Study Reveals

By Robert N. Burnett

Research Engineer, Humble Oil & Refining Co., Houston

THE fact that a walking beam is subjected to serious stresses other than those of flexure is evidently lost sight of by a majority of those engaged in the design, manufacture and use of steel beams, for the steel beams now being supplied to the oil industry are admittedly deficient in resistance to the ordinary and necessary stress incident to their use in the pumping of wells. The accuracy of this statement is proved by the experience of producers everywhere who have installed steel walking beams for permanence only to find in a great many cases that such beams failed after a shorter period of usage than did the old wooden beams that preceded them.

Following is a brief analysis of the principal stresses to which any walking beam is subjected:

1. Consider the beginning of one cycle of stress to be when the forward end of the beam is at upper dead center just before the downward half of a stroke begins. Referring then to the diagram, Fig. 1.

Resolving the force "W" in directions normal to and parallel with the neutral axis of the beam, reveals the forces "F" at either end which produce flexure and the axial forces "C" and "T" which produce compression and tension respectively within the portions of the beam on their respective sides of the fulcrum A, the beam is not in stress equilibrium and so tends to move in the direction of the axial forces C and T as indicated. The tendency is resisted by a component of the reaction R, but since the fulcrum A is not on the line of action of that component, a twisting moment is developed in that center region of the beam which results in a disorganization of stress directions and consequent local intensification of stress throughout the region of the beam which is in tension.

It should also be noted that the effective length of beam varies and that the two sections on either sire of the beam center are of unequal length. The distance X in Fig. 1 being greater than the distance Y, by the amount of *twice* the depth to the neutral axis times the sine of the angle between the forces W and F. Now, since the flexural stresses are proportional to the effective distance between points of application of load and reaction, it is evident that the intensity of flexural stress in section X is greater than in section Y. The forces C and T are equal in magnitude, but the beam is stronger in resistance to compression than it is to tension so that the effective stress differential between sections X and Y is further increased. If failure is to occur then while the beam is in this position such failure will obviously take place in section X along the plane of maximum stress therein.

Fig. 2 shows the beam in its horizontal position—the only one in which it is simply and truly a beam. In this case X and Y are equal and the applied loads are normal to the axis of the beam, hence there are no biaxial stresses. The beam, however, remains in this condition of simplicity but a moment. Fig. 3 shaws the beam at the lower dead center of the cycle. The conditions here are exactly the reverse of those shown in Fig. 1.

In this case the forward end of the beam carries the predominant stresses and the axial components have changed completely from compression to tension. X is now less than Y and the twisting moment of the centre region has appeared in the Y section. These changes, of course, take place progressively as the beam rocks upward and downward in the course of a stroke and the point of application of the resolved loads travel along the neutral axis from a point distant in the amount of (a sine —) on one side of a line through the hangar normal to the axis to a point equally distant on the opposite side of that line—and back again to the point of beginning during each complete cycle. The axial stresses vary from maximum to zero within the quadrants above and below the horizontal plane and change directions completely each time the beam crosses that horizontal plane.

OBVIOUSLY these conditions are susceptible of reduction to mathematical equations for design evaluation but design is beyond the purpose of this discussion. It has been intended here merely to emphasize the fact that the so-called walking beam is by no means a simple beam and to indicate that it cannot be successfully designed on the basis of conventional beam formulae except after radical modification of those formulae. It is now pertinent to consider fatigue stresses in addition to those so far mentioned.

Fatigue Failure of Steel Walking Beams

The theory now generally accepted in scientific circles concerning the

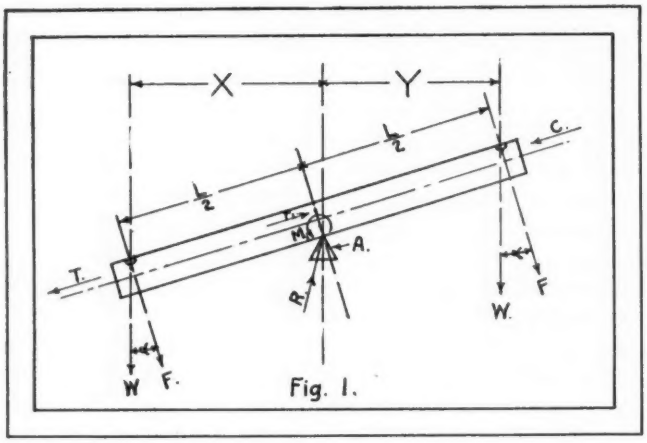


Fig. 1.

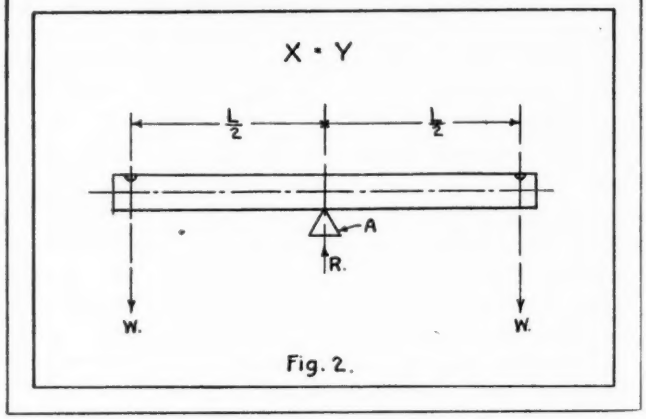


Fig. 2.

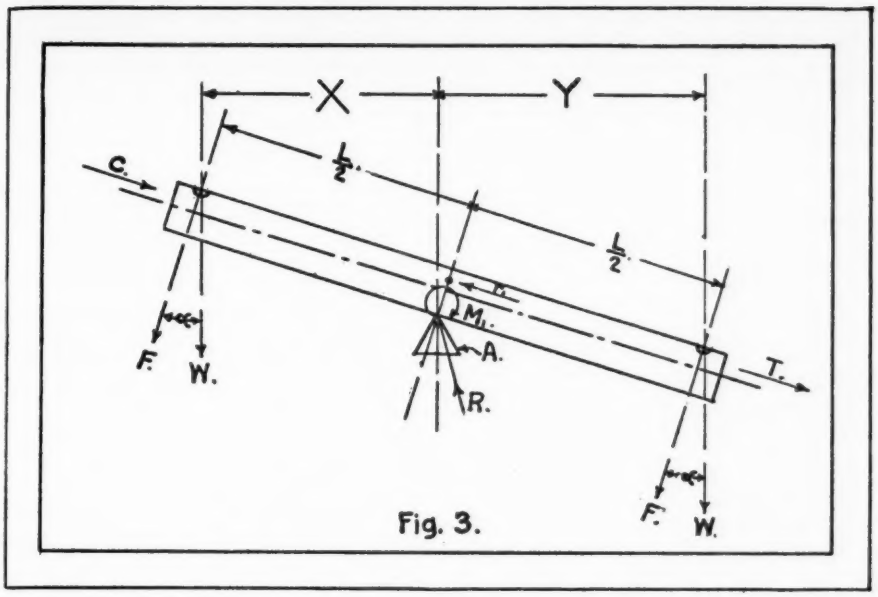


Fig. 3.

mechanism of fatigue failure of metal may be briefly summarized as follows:

A minute crack is formed in some region of high localized stress within the metal and this microscopic fissure spreads progressively until failure of the member ultimately occurs. This original minute fissure may have its inception due to any one or any combination of a number of causes.

Steel is not a perfectly homogeneous material and its crystals of the foreign inclusions are generally of lesser strength than those of the basic metal, hence a stress far below the resisting capacity of the steel itself may crack the crystals of the other constituents and so adduce the fissure whence the ultimate failure occurs.

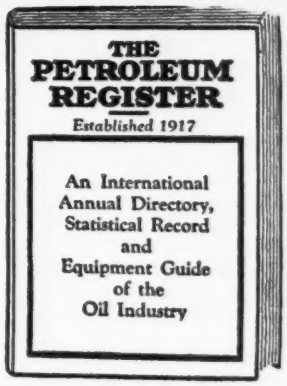
Moreover, the crystals of the steel itself have well defined planes of weakness, called "cleavage planes" and local stresses acting parallel with such planes may cause separation and slip of the parts of the same crystal along those planes even though the stress is materially below the capacity of the crystal to resist without damage a differently directioned force. Slip may also occur between adjacent whole crystals of dissimilar material and possibly between those of identical material under certain circumstances, and in any event the fundamental failure which dooms the member takes place.

Naturally the region at which crystalline failure most commonly occurs is at or near rivet holes, or bolt holes, or other breaks in the surface of the metal.

REPEATED stress may produce in a ferrous metal either greater strength or destruction, depending upon the magnitude of the stress and possibly also upon the rapidity of its application. If the stress be light and not too rapidly applied the effect is similar to that which would obtain in result of cold working of the material, i. e., the granular structure is rendered more minute and the strength is improved proportionately. On the other hand, however, if the stress be of magnitude above a certain limit or if it be applied in cycles of great rapidity the agencies of destruction overbalance the tendencies toward improvement and the material ultimately fails; the period of its usefulness being dependent upon the magnitude of the stress for any given rate of repetition. The importance of the rate of repetition is not great in comparison with stress magnitude and except in unusual cases it may be ignored. For all practical purposes, then, it may be stated that the *endurance limit* of a material is that limiting unit stress below which the material will experience for a time certain improvement in structure and will resist without apparent damage an almost indefinite number of stress repetitions.

THIS endurance limit is always below the proportional elastic limit of the material but does not seem to bear any fixed mathematical relation to that elastic limit.

Obviously, then the ordinary formulae of mechanics of materials are not directly applicable in the design of members subjected to repeated or reversed stresses. This is because such formulae suppose metallic homogeneity and uniformity of stress distribution, whereas no such simple set of conditions actually obtains. For these reasons the allowable unit stresses prescribed in the design of steel beams existing under conditions of static equilibrium are not properly allowable in the case of a rapidly moving steel walking beam wherein the bending stresses are accompanied by axial stresses often eccentrically acting, and wherein the bending stresses vary twice between maximum and minimum magnitude during a single complete stroke and wherein the axial loads



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alternate between tension and compression during the same period besides having opposite values in the two sections of the beam in either direction from the beam center or pivot at all times.

It is difficult to conceive a more severe set of conditions than these and when they are once understood it becomes obvious that great care is required in meeting them.

IT HAS been said that since the usual unit stresses employed in steel design include a factor of safety of from two to four, these should be adequately safe for application to walking beam design. Actual experience has long since refuted that contention, and for good reason.

In the first place factors of safety are largely fictitious and they conduce to an attitude of false security. A tension specimen of ¼-inch diameter will always show a greater computed unit strength than will a specimen of the same material having a diameter of 1 inch. No one knows how much less that unit strength would be for a 4-inch bar, or for irregularly shaped sections such as I-beams. Of course, there is a possibility of greater strength in the latter case but that possibility seems slight in view of the other contrary evidence.

In the second place, endurance limit and proportional elastic limit are apparently not related according to any definite law of behavior, excepting in so far as the elastic limit may possibly, although uncertainly, be regarded as the limiting maximum of the endurance limit, and a quantity that may constitute a factor of safety for the one may be nothing of the sort for the other.

Moreover, elastic limit contemplates high stress uniformly distributed over a relatively large area, whereas endurance limit normally concerns low unit stress intensified locally and affecting microscopic crystals primarily and progressively.

The fatigue strength of steel is markedly lowered by abrupt changes in outline and by cracks, nicks, grooves, holes, etc., such as would have little or no appreciable effect upon the elastic strength of the same material. Shoulders squared or with short radius fillets are serious sources of weakness and even poor surface finish may decrease the fatigue strength very noticeably.

It is certain then that whether we are designing or writing specifications for steel members subjected to repeated reversed stresses, we are confronted with conditions entirely foreign to those conventionally accepted as criteria for design, and we must therefore revise our concepts of mechanics of materials accordingly.

The consensus of scientific opinion now is that it is unsafe and unwise to apply factors of safety to the proportional elastic limit of steel in the hope of obtaining a properly allowable fatigue stress. Independent means of determining the fatigue endurance limits have been evolved for various grades and types of steel and these limits are now fairly well established, thanks principally to the exhaustive work of Prof. H. F. Moore of the Engineering Experiment Station, University of Illinois. This same investigation; aided by various research engineers, has perfected a method whereby the endurance limit of any ferrous specimen may be determined within a very short time and with a satisfactory degree of accuracy.

The effect of holes and fillets in intensifying stress in a member subjected to complete reversals of loading may be shown by the mathematical theory of elasticity to decrease such strength of the member to resist such reversed flexure to 33% of the strength of the same specimen free of any hole. This theory, however, takes no account of the strengthening effect which as previously stated is simultaneously acting with the destructive agencies and so it does not indicate the full truth of the phenomena. It has been found by direct experiment that holes in a specimen under cyclic stress will reduce its resisting strength to between 57% and 85% of its normal strength, depending upon the location, number and size of the holes. For a member so thoroughly perforated as is a built up steel walking beam this value would probably not be greater than 60%. The endurance limit of such a beam then, neglecting surface finish, etc., would be 0.6 x 45% or 27% of the ultimate strength of the steel, and this includes no factor of safety.

OTHER careful and extensive tests to determine the effect of surface finish indicate that a specimen having a rough finish is about 18 per cent less strong in fatigue than the same specimen with a polished surface. It is likely that the surface of rolled plate is superior to a rough ground surface from the standpoint of its effect on fatigue resistance for the reason that it is freer of minute cracks, scratches, etc., and it is therefore reasonable to assume that such a surface would not decrease the fatigue strength of the member by more than 15 per cent, comparatively with the polished surface. Neglecting the effect of irregularity of surface then, the practical endurance limit this far reduced is (27 per cent — 0.15 x 45 per cent) of 20 per cent of the ultimate tensile strength.

The effect of abrupt changes in cross section caused by faulty rolling, faulty heat treatment, or by intent, varies according to the nature of the defect, but for such conditions as are commonly encountered in rolled steel, e. g., nonuniformity of thickness, and intentional change of shape, such as

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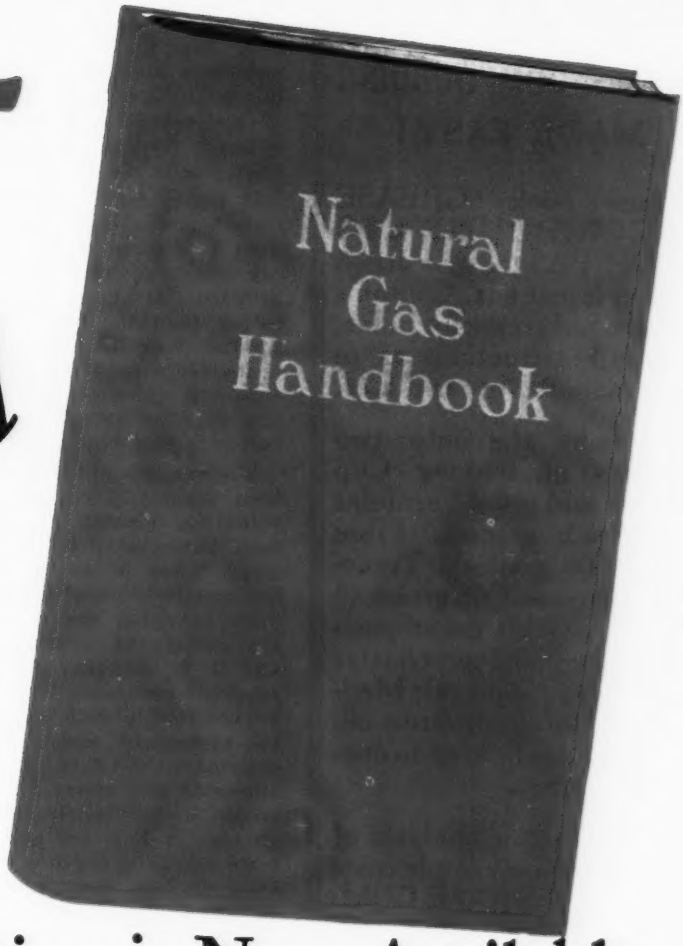

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NATIONAL PETROLEUM NEWS

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angles, etc., the effect is to reduce the fatigue strength by about 5 per cent. This finally brings the apparent endurance limit of the practical member down to (20 per cent — 0.05 x 45 per cent) or 18 per cent of the ultimate strength of the steel. But even this is not the end.

It seems highly probable that the tests whereby the apparent endurance limit is determined disclose the critical stress at which appreciable slip between crystals begins to occur rather than the beginning of actual fatigue fracture. These phenomena undoubtedly occur at nearly the same time but fracture certainly precedes slip to some extent and so a safety factor is here required.

The various influencing factors have been separately considered and provided for already so that it would seem unnecessary to introduce a very large factor of safety to cover this last relatively minor uncertainty. However, provision should also be made for periods of unexpected over-load and it is thought that if this last apparent endurance limit be decreased by one-fourth, both requirements will be adequately met. The *practical endurance limit* then, or the maximum allowable unit stress for members intended to indefinitely resist repetitive stresses is 13½ per cent of the ultimate tensile strength of the particular steel used, or more accurately, about 30 per cent of the *apparent* endurance limit as determined from test of a lathe turned, polished, and regularly shaped specimen—whatever relation that endurance limit may bear to the ultimate strength of the material.

IF THESE values appear at first glance to be absurdly low it should be remembered that they are derived from study of exhaustive fatigue tests conducted over a period of many years by the world's foremost scientific investigators and it should further be remembered that steel walking beams are consistently failing in service for no apparent reason. The best of them are good for but a few years and some fail within a few months, and yet according to our old theories they are adequately proportioned and should never fail. Modern fatigue theory discloses, however, that these beams are actually overloaded to the extent of from 100 per cent to 200 per cent and so explains their failure.

A simple and quickly conductible test for determining the apparent endurance limit without regard to its relation to ultimate strength has been perfected recently. It has value in practical application since it affords a fairly accurate index of fatigue strength, can be rapidly made, and may be used as a check on the method just discussed. This test is predicated upon the phenomenon of internal heat of friction in relation to applied stresses and is accomplished by affixing two differential copper-constantan thermo-couples of high sensitivity to the test specimen which is then subjected to cyclic stress at the rate of 1000 per minute for 30 seconds for each of a number of stress values. The galvanometer deflection is read at the conclusion of each run and a curve is plotted to depict the increase in temperature with increase of stress.

The point at which the curve breaks sharply corresponds to the endurance limit. This value is always slightly below the endurance limit as determined by actual stressing to failure but its relative conformity is quite constant for all of several hundred comparative tests.

This test has another feature of interest and probably of great value in that the temperature-stress curves always show another slight break considerably below the endurance limit and it is thought that this is the point at which incipient fracture of the weaker crystals occurs. In other words, it probably is the *absolute* endurance limit below which the material will resist an infinite number of cyclic stresses due to the predominance of strengthening influences over destructive agencies at the lower stress magnitudes.

Having reviewed briefly the phenomena of fatigue stresses, and being in mind of the other stress analyses outlined at the outset of this paper, it is submitted that the following considerations should govern the manufacture and selection of steel walking beams.

1. Allowable working stress should be established as a suitable fraction of the fatigue endurance limit of steel used.
2. This fatigue endurance limit should be determined by the rise of temperature method.
3. Beams should be built-up by welding instead of by riveting.

Tallow-Grease Research To be Established

CINCINNATI, O., Oct. 25.—A fellowship for research work in tallows and greases has just been established at the Mellon Institute of Industrial Research, University of Pittsburgh, Pittsburgh, Pa. by the Emery Candle Co., of Cincinnati.

This fellowship will be under the direction of Dr. Robert N. Wenzel, of Palo Alto, Calif., who was formerly a professor of chemistry at Stanford University and has done research work for the American Smelting & Refining Co., and others.

Betterment of distillation and saponification processes as adapted to stearic acid and red oils is the object, according to F. F. Jordan, vice president and general manager of the Emery company.

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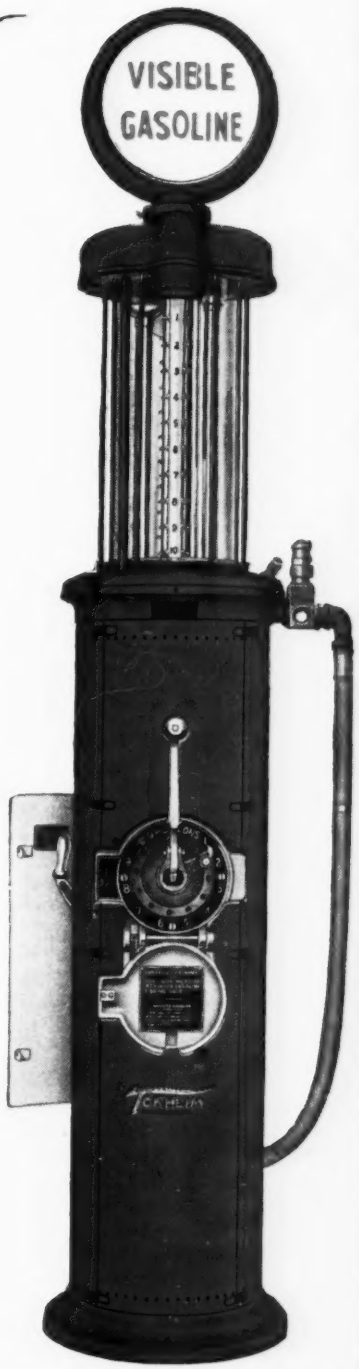

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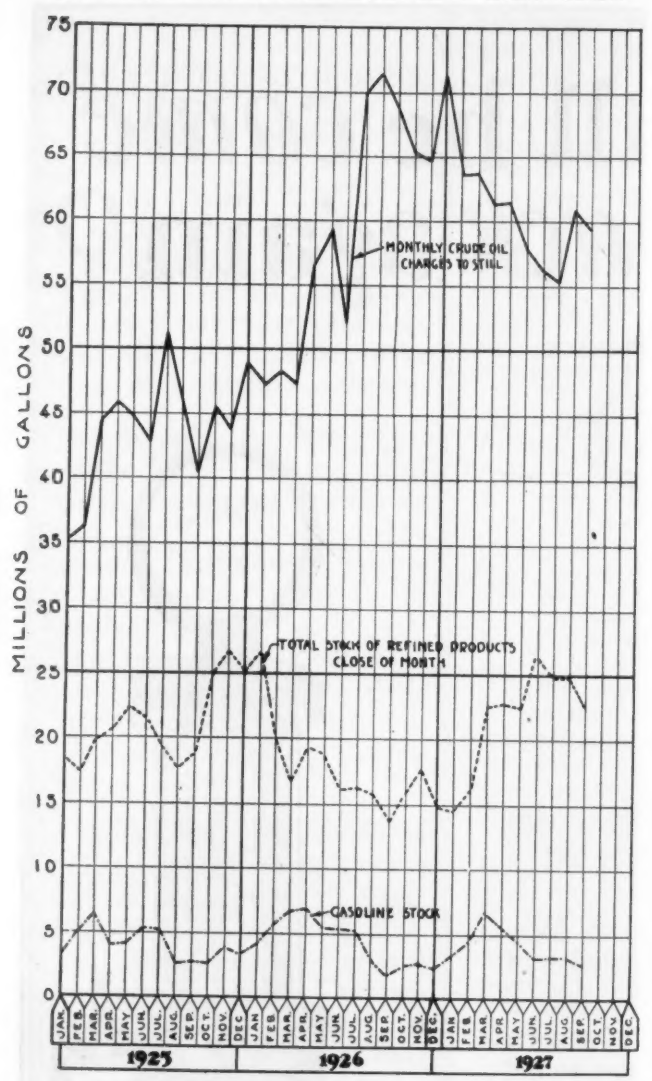

Fig. 1—Chart showing stocks of gasoline and total stocks of finished products on hand at refineries in north Louisiana and Arkansas at the close of each month compared with total crude oil charges to stills during the month. Only plants covered by weekly reports gathered by National Petroleum News are included

Low Inventories Free Former To Help

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, Oct. 31

IN AN address before the Four State jobbers' meeting at Kansas City early in October the sales manager of the Hudson Motor Car Co. revealed one reason why the motor car industry has been able to produce better cars for less money from year to year. He said the automobile industry had learned to keep its dollars busy.

Just a few years ago the Hudson company was turning out 200 cars a day. At that time its inventories of parts and cars were valued at about $12,000,000. Now the company is making about 2,000 cars a day, 10 times as many as before. But the inventory maintained by the company has not grown to $120,000,000. On the contrary, it is now about $7,000,000, only a little more than half as much as it was when the company was producing a tenth as many cars.

The manufacturing branch of the petroleum industry presents a vastly different picture from that disclosed by the automobile manufacturer who also manufactures a somewhat seasonable commodity. The amount of capital tied up in refined oil inventories in the United States represents a staggering sum year in and year out, in times of overproduction of raw materials and in times of scarcity of crude.

There are some notable exceptions to the assertion that petroleum refiners have not scaled down their inventories since the war and made available the formerly idle cash for working capital. The Mid-Continent field as a whole has been keeping its inventories down for the last three or four years. In Arkansas and north Louisiana, particularly, refiners have learned to get along on extremely low stocks of finished goods without any disaster or even embarrassment.

The president of an important Mid-Continent refining company recently told the writer that his policy of keeping no surplus of finished oils on hand was really an amplification of the hand-to-mouth policy which has been followed by both retailers and wholesalers in all lines of business since the deflation period following the war when so many individuals and companies were exceedingly embarrassed by falling values. The refiner stated by way of illustration that it has been his custom to buy such articles as underwear in dozen lots to avoid running into the clothier's every few weeks. Recently his clothier has been unable to give him a full dozen when he called. Instead he would wrap up two suits and send out the remainder within three or four days. The clothier is keeping a small stock of a widely selected line of goods, really a line of samples, and with modern rapid transportation is able to meet the demands of his customers without investing a tremendous amount of capital in stock.

AS APPLIED to refining the president of this company has found that, with small stocks, he has cash in the bank to work with instead of having to go to the bank to borrow money. He has found that his costs have been cut for maintenance of tankage itself, for insurance on the finished goods and even in such small items as pumping fluid from one part of the plant to the other. An important factor has been that treating and rerunning costs are lower since gasoline is made, treated and sold fresh without giving it time to go off specification in storage. Evaporation losses are avoided even though storage tanks may be hooked up to a vapor recovery system.

A few years ago there was greater reason for large inventories of refined oils than at present. Gasoline was a more seasonal commodity and it was difficult to forecast the volume needed at a given period in the future. Now the difference between summer and winter demand for petroleum products has become relatively unimportant both because of excess refining capacity and because winter driving is the rule rather than the exception. Now it is possible to forecast gasoline demand with reasonable accuracy and meet any abnormal requirements of the trade quickly.

It was mentioned before that the Mid-Continent field as a whole has been pursuing a more conservative course as regards inventories than the country as a whole. For example one Oklahoma refining company formerly held as much gasoline in its storage tanks as all refiners in the state now carry regularly. In the Mid-continent the best example of small inventories is seen in Arkansas and the Shreveport district of northern Louisiana.

An analysis of reports gathered weekly by NATIONAL PETROLEUM NEWS

# of Finished Oils Frozen Dollars Refiners

covering refineries in this group with a rated capacity of 53,700 barrels of crude a day shows that in 1925 average total stocks of finished products were equal to only 14.5 days' production at the rate the plants were operating during the year. In 1926 this group reduced its stocks of all finished goods to 8.9 days' production and for the first nine months of this year average stocks represented only 10.9 days' production at the average rate.

In Oklahoma, NATIONAL PETROLEUM NEWS obtains weekly reports from companies that have an operating capacity of 165,900 barrels of crude a day actually running an average of about 105,000 barrels of crude a day. A check of stock figures for these plants shows that in 1925 the group carried the equivalent of 27.8 days' production of finished products exclusive of lubricating oils for which no reports were obtained. This was about twice as large a stock total as in Arkansas and north Louisiana on the basis of crude runs. In 1926 the Oklahoma group carried an average of 31 days' production in refined oil storage and so far this year total finished stocks have represented 31.1 days' production, almost three times as much as the Arkansas and north Louisiana group.

OKLAHOMA is not picked out as a "horrible example" for comparison with the Arkansas-Louisiana group. As a matter of fact a number of other groups might be shown with total finished stocks running far above those carried in Oklahoma.

Two charts have been prepared to show the relative size of refined oil stocks in the two groups under examination. Fig. 1 shows the stocks of gasoline and the total stocks of refined oils ready for shipment at reporting Arkansas and north Louisiana refineries at the end of each month since January, 1925. The chart shows also the volume of crude oil charged to stills each month, assuming that each month contained 30 days. This was to give every month equal production weight on the chart. The figure was arrived at by taking actual daily average runs and multiplying by 30 days in each case.

Fig. 2 is a similar chart covering reporting Oklahoma refineries. The same method was used in preparing both charts. It will be observed that in Oklahoma the total supply of finished products was less than the amount of crude charged to stills in a 30-day month in 1925 until October. Since then the total of finished stocks has been larger than 30-day crude oil charges to stills most of the time.

Gasoline stocks in both areas are kept at a low level as compared with the country as a whole. But in north Louisiana and Arkansas the stocks are kept at a point which would be considered dangerously low by many manufacturers. At present stocks represent less than 5 days supply at the current rate of production. A level that low has been reached many times in the past without serious consequences.

In a recent article in "The Magazine of Business," Cady B. Durham, vice-president, Buick Motor Co., a division of General Motors Corp., wrote the policy of his company was to protect a transportation operation with reserve stocks but never to protect a manufacturing operation. "Accept the principle that it is better to shut down the plant through mischance than to guard against it by carrying reserve stocks—then see that mischances do not occur."

IT MAY be argued that the business of refining crude oil is more fraught with possibilities for mischance than the job of building automobiles, but as a matter of fact the refining industry has a very good record of continuous production. Now and then there is a major fire or explosion which will close a plant indefinitely but such accidents usually require such a long period of inactivity that reserve stocks will not meet the needs of customers entirely and the refiner finds it necessary to buy for resale.

It might be argued that a comparison between Oklahoma and north

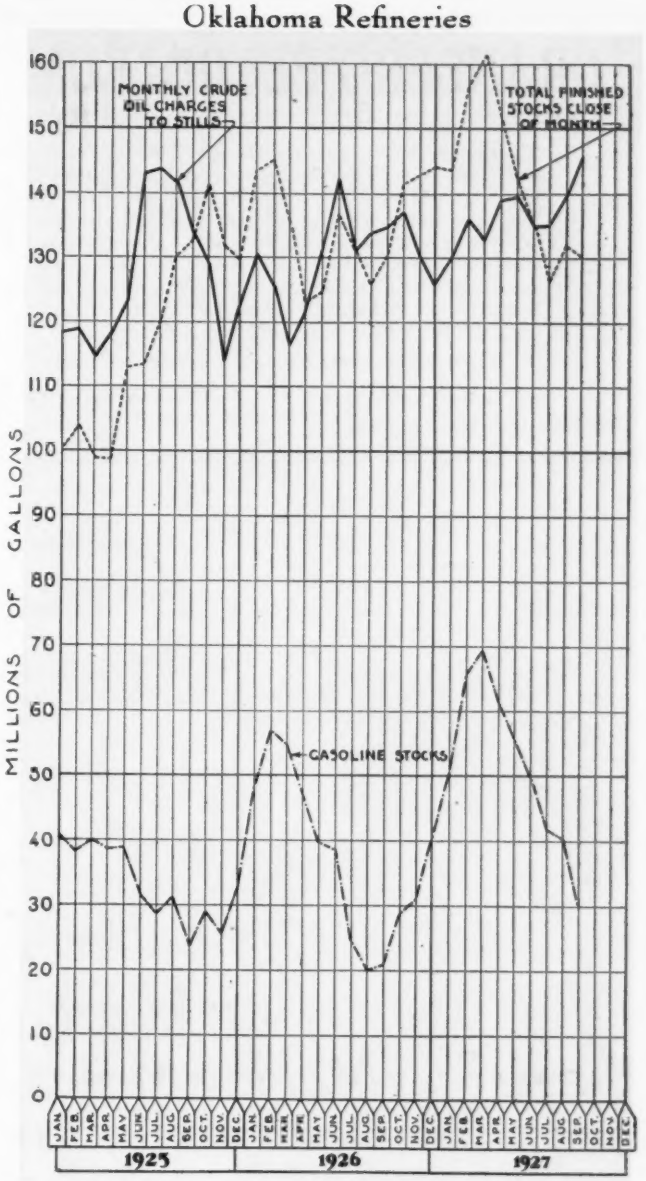

Fig. 2—Chart showing stocks of gasoline and total stocks of finished products exclusive of lubricating oils at refineries in Oklahoma covered by weekly reports to National Petroleum News. Total crude oil charges to stills for each month are shown also for comparison with the level of inventories

IN ANOTHER article on the subject of inventories to be published in an early issue, the writer of this present article will present an analysis of the amount of capital tied up in finished product inventories at Oklahoma refineries as compared with capital involved at Louisiana and Arkansas refineries.

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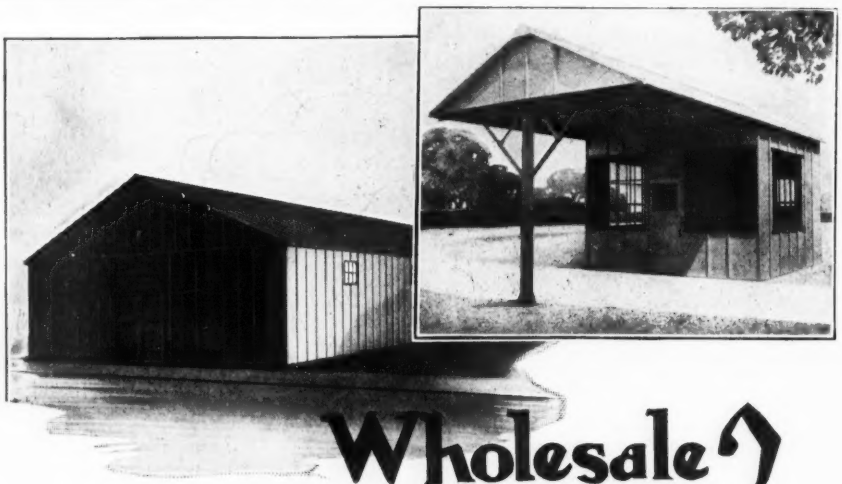

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Louisiana and Arkansas operations is unfair for the reason that Oklahoma ships most of its gasoline north where motor operation is more seasonable while the Arkansas-Louisiana group ships its products to the southeast where weather conditions are more nearly equal the year round. A study of the gasoline shipments of the two groups does not reveal a marked difference in summer and winter consumption as indicated by these shipments.

In 1926 reporting Oklahoma refiners shipped 337,541,000 gallons of gasoline or 44.486 per cent of the year's total in the six cold months, January, February, March, April, November and December. In the six warm months from May through October the Oklahoma refiners shipped 421,221,000 gallons or 55.514 per cent of the year's total.

The north Louisiana and Arkansas group shipped 74,496,000 gallons or 45.681 per cent of the year's total in the six cold months and 88,583,000 gallons or 54.319 per cent in the six warm months. This analysis would tend to show that there is very little difference between the two groups as far as evenness of demand is concerned in spite of the difference in weather in their respective consuming territories. This might be explained by the fact that there are more hard surfaced roads in the north and that rain cuts down gasoline consumption even more than cold weather where roads are not paved.

Nova Scotia Getting Drilling Attention

TORONTO, Ont., Oct. 29.—Nova Scotia is again getting attention from oil producing companies. Imperial Oil, Ltd. now has engineers and geologists surveying the vicinity of Joggins, Cumberland county.

The H. L. Doherty Co., New York, which has been drilling on Governor's Island in Hillsborough Bay off the coast of Price Edward Island for the past two years, has transferred its activities across Northumberland Strait to Pictou Island, a short distance away.

The Gulf Oil Co. has been operating in the Inverness district of Cape Breton Island and recently shipments of large pipe have been sent to Margaree and Mabou.

HOUSTON, Oct. 29.—F. L. Rogers, sales manager of Deepwater Oil Refineries, Inc., operating a lubricant plant on the Houston ship channel, announces the signing up of distributors for "Nu-Pro" oils in eight states under the company's exclusive franchise policy. Parts of 14 other northern, southeastern and mid-western states, he says, have been taken. The exclusive franchise policy has been in effect three months.

Glances at Oil Technology of the World

National Petroleum News

The Chemistry of Oil Refining

A STUDY has been made of the removal of resins and asphaltic materials contained in the crude oils by means of sulfuric acid. A stable emulsion is formed and gradually black specks appear which collect into flakes and which remain in suspension for a long time, thus prolonging the treatment. An attempt has been made to accelerate the purification process by inducing more rapid precipitation of these vitriolic muds.

It has been found that precipitation is almost instantaneous when definite quantities of organic bases, such as aniline, dimethylaniline, pyridine and quinoline, etc., are added. The precipitating power of these bases depends on their solubility in the mineral oils. A somewhat slight, limited solubility, such as that possessed by aniline, appears to be the most favorable condition for this precipitation. The total precipitation of the resins and asphalts depends, moreover, on the duration of the preliminary sulfuric acid treatment.

A Polish gas oil was treated with 3 per cent concentrated sulfuric acid for 30 minutes and the vitriolic muds formed were precipitated by the addition of 1.5 per cent of aniline. The same results, as far as the clarity of the product is concerned, was obtained in this case as when 6 per cent of sulfuric acid were used and the precipitation was allowed to proceed in the ordinary manner, lasting several hours.

The loss of oil was also reduced to a minimum. The action of the organic base seems to be to combine with the asphaltic matter and resins to form compounds which easily settle out of solution. Societe Chimique, March 26, 1927.

Corrosion in the Refinery

IN DISTILLING crude benzine from Polish petroleum at a temperature of 400 degrees Cent. it was found that iron valves and condensing columns of the apparatus were badly corroded. The distillation was carried out with steam, and it was concluded that this corrosion must be due to either or both of two causes, namely, the presence of chlorides in the emulsified water in the oil, and on the production of a large volume of carbon dioxide by the partial oxidation of the unsaturated hydrocarbons in the oil. The latter effect is due to the presence of atmospheric oxygen in the oil, which must come either from the entrainment of air in the steam used for the distillation, or from leakage of air into the apparatus through improperly made joints.

An investigation was made to determine these conditions in a refinery that worked on Polish petroleum, and it was found that the uncondensed gases from the stills contained as much as 2½ per cent of carbon dioxide. The water that was removed from the apparatus also showed an iron content of four kilograms per hundred cubic meters of oil distilled. Part of this iron was present in the form of iron chloride and part in the form of ferrous hydrogen carbonate ($FeHCO_3$).

It was found that these troubles could be conveniently and satisfactorily eliminated by the addition of lime or dilute alkali solution to the water in the boilers, and also by avoiding the use of air-containing water in making steam. It is also understandable that it is important to keep all joints in the apparatus airtight. For further information see Chemiker Zeitung, 1927, volume 51, pages 528ff.

Quality of Activated Carbon

THE main different grades of activated carbon on the market make it imperative to have some good method for determining their quality and effectiveness in the refinery operations. Certain information of value along these lines may be obtained from the sugar industry where activated carbons are also employed. Thus the suitability of the carbon for use in sugar refining was determined by examining them for their water, ash, water-soluble matter contents, their reaction and the weight of one liter of the loosely-packed material. Other factors which appear to be of importance are adsorption of inorganic substances, alteration of Ph value during decolorization, rate of filtration and power of regeneration. These ought to be determined. One great difficulty is to translate laboratory results into actual practical operation. Z. Zuckerindustrie Czechoslov., 1927, 511-4.

Laboratory Pipe Still Glimpses

IT IS often necessary to simulate conditions that exist in practical operations as closely as possible in laboratory experiments. This is generally a difficult matter for the reason that apparatus that can be used in the laboratory, unless it is a very large industrial laboratory, is not only very small in comparison with plant equipment, but the conditions that govern the operation of such apparatus are generally entirely different from those that exist in the refinery.

It is therefore always interesting to read of investigations that have been made and of work that has been done in developing laboratory apparatus that will simulate practical conditions.

The temperature at which light oils are vaporized in a pipe still is 80 to 100 degrees lower than that in the usual continuous crude oil sills. In the laboratory pipe still, which is described in the Journal of the Institute of Petroleum Technologists, year 1927, volume 13, pages 91 to 100, the crude oil is fed at the rate of 7 to 10 cubic centimeters per minute into an inclined tube of five eighths of an inch diameter (internal) through which passes an electric heater. The latter consists of a coil of nichrome wire wrapped around a tube three-quarters of an inch in diameter (outside). A temperature of about 300 degrees Cent. is attainable.

The oil vapors from the inclined tube enter a chamber filled with glass beads nearly up to the level of a thermometer which registers the vapor temperature. The inclined tube and chambers are heat insulated. A thermometer in reversed position enters the bottom of the chamber, and indicates the oil temperature, and the residue leaves the chamber at this point and passes through a cooler to a receiver, while the vapors from the chamber leave at the top, passing through a condenser to a receiver.

The vapors are kept in intimate contact with the oil, the temperature being measured immediately after the separation of vapor and oil. The temperatures shown for percentage of distillate, though starting at the same initial point, are considerably lower than those in a flask distillation, as shown in graphs. The variations in temperature may be maintained within two degrees. The still may be used for observing the equilibrium temperature of light distillates.

FOREIGN PATENTS

British Patents

Refining

August 31, 1927

Cracking Hydrocarbon Oils for the purpose of obtaining a gas which may be used in the carbureting of water gas and an intermediate product which can be used as a motor fuel. Olefines are separated from the cracked products. The cracking tube is heated by electrical means. Petroleum Chemical Corp., New York, N. Y., and E. P. Stevenson, Cambridge, Mass. Filed March 24, 1927. 273,781.

Purifying Mineral and Tar Oils and Cracking Hydrocarbons. The residue after the first distillation with aluminum chloride is extracted with concentrated sulphuric acid instead of sulphurous acid. Allgemeine Gesellschaft fuer Chemische Industrie, Schoeneberg, Berlin, Germany. Filed March 11, 1927. 273,999.

Sept. 7, 1927

Destructive Hydrogenation of Mineral Oils, the process being carried out under a pressure of at least 50 atmospheres in the presence of molybdenum or its compounds. I. G. Farbenindustrie A. G., Frankfort-on-Main, Germany. Filed March 8, 1926. 274,401.

Sept. 14, 1927

Cracking Hydrocarbons, particularly the residuum of high grade crude oils which have been distilled for the removal of the gasoline. The process consists in heating the oil to a cracking temperature in a coil and then passing it into an enlarged thermally insulated region where it undergoes cracking under pressure. Standard Development Co., New York, N. Y. Filed March 14, 1927. 274,763.

Bleaching Mineral Oils by means of alkaline hypochlorites after refining with acids and alkalies, the operation being conducted in the presence of agents promoting the decomposition of the hypochlorite such as salts of heavy metals. I. G. Farbenindustrie A. G., Frankfort-on-Main, Germany. Filed June 7, 1927. 274,828.

Sept. 21, 1927

Distilling and Cracking Hydrocarbon Oils in which the crude oil is preheated by the residuum and also by the vapors and condensate, the various streams of preheated oil or mixtures of vapor and oil being passed into a mixing vessel prior to passage into a vapor separating chamber. F. Tinker, Coldfield, Warwickshire, England. Filed April 28, 1926. 274,959.

Production

Sept. 14, 1927

Bore Hole Apparatus, an under-reamer comprising a mandrel provided with pairs of eccentric parts diametrically opposed, toothed rolling cutters, separated by a spacer and pressed upwards by means of a spring to take up their working position on the eccentric parts. J. Grant, Vernon, Calif. Filed July 4, 1927. 274,449.

Means for Maintaining Oil Well Under Control during removal of fishing tools, wash pipes, swabs, bailers or drilling tools, consisting of a collar threaded to the casing above the usual high pressure valve and a body provided with four pivoted dogs pressed by springs and having at their lower ends threads adapted to engage within the collar. Hydraulic packing is provided in a groove to form an oil-tight joint between the collar and the body. T. Darwent, St. Patrick, Trinidad. Filed July 20, 1927. 274,886.

Miscellaneous

Aug. 31, 1927

Active Carbon by treating the raw materials with heat and an activating gas, such as superheated steam, carbon dioxide, chlorine, etc. Nammlooze Vennootschap Algemeene Norit Mattschappij, Amsterdam, Holland. Filed July 2, 1927. 273,761.

Swiveling Joints for pipes in which one member of the joint is held to a seating by a spring and also by pressure of the internal fluid. Shell-Mex Ltd., and J. Lawson, London, England. Filed April 9, 1926. 273,813.

Containers for Oil of cylindrical form adapted to be supported and rolled for pouring upon their curve wall. The pouring spout is near the top and is provided with a pouring lip. Looboyle Refining Co., Quapaw, Okla. Filed Nov. 30, 1926. 273,959.

Universal Joints in which the flanges are provided with aligned cylindrical holes engaged by rubber plugs provided with spacing rings. The plugs may be solid or tubular and lined with metal reinforcement. W. H. Dorman & Co., and R. L. Stafford, Stafford, England. Filed Jan. 12, 1927. 273,973.

Preventing Boiler Scale by passing alternating current through wall of boiler. E. Haasz, Budapest, Hungary. Filed June 24, 1927. 274,061.

Sept. 14, 1927

Low Temperature Distillation and Hydrogenation of Coal to obtain oils. The operation is carried out in a retort apparatus, the coke obtained being ground in a mill driven by a motor, steam from the turbine driving the generator being used to preheat the coal. Hydrogen is obtained by electrolysis and used in the hydrogenation. R. Feige, Berlin, Germany. Filed July 11, 1927. 274,465.

Active Carbon made by treating finely divided wood impregnated with calcium acetate in a continuous stream through a retort at 1000 degrees C. K. S. C. Bone, and Wilson Bros. Robin Co., Liverpool, England. Filed March 19, 1926. 274,538.

Metal Pipes lined centrifugally with cement or concrete and provided with an inner coating of bitumen, the material being applied in a heated condition. The bitumen may also be applied externally. S. Dickson, New Malden, Surrey and Israel's Patent Ltd., Westminster, England. Filed April 22, 1926. 274,565.

Activated Charcoal by the dissociation of a hydrocarbon gas, accomplished in a heated chamber, the gas being maintained at a temperature sufficiently low to prevent polymerization up to the moment of entry into reaction chamber. Canada Carbide Co., Ltd., Montreal, Canada. Filed April 24, 1926. 274,573.

French Patents

Miscellaneous

July 28, 1927

Activated Carbon. Improved process. Wilson Brothers Robin Co., Ltd. Filed Feb. 10, 1927. 628,980.

Improved Heat Interchanging Apparatus. A. E. Leek. Filed Feb. 12, 1927. 629,047. Aug. 4, 1927 8 pt lf centered .

Preparing Synthetic Gasoline and a decolorizing carbonaceous substance, starting from rubber waste or vulcanized rubber wastes. H. Nishida and K. Shimada. Filed Feb. 18, 1927. 629,281.

Aug. 11, 1927

Treating Liquid Combustibles to obtain products of value. P. G. Grene. Filed April 28, 1926. 629,407.

Refining

July 21, 1927

Converting Saturated Hydrocarbons into unsaturated hydrocarbons of great value. I. G. Farbenindustrie A. G. Filed Feb. 7, 1927. 628,738.

Activiating Carbon or Carbonaceous Matter of any sort with simultaneous production of combustible gas, and apparatus for carrying out this process. Societe de Recherches et d'Exploitation Petroliferes. Filed April 15, 1926. 628,621.

Light Hydrocarbons from Heavy Hydrocarbons. Bernard Ormont Associates Inc. Filed Feb. 8, 1927. 628,695.

Aug. 4, 1927

Oil Separator for vapors and the like. J. Muchka. Filed Feb. 16, 1927. 629,159.

Aug. 11, 1927

Distillation or Pyrogenation of combustibles and Liquid or Easily Liquefiable Hydrocarbons. B. G. Green. Filed April 28, 1926. 629,406.

Treating Solid and Liquid Combustibles and Bituminous Products. P. G. Greene. Filed April 28, 1926. 629,407.

Continuous Treatment of Hydrocarbons, process and apparatus. Allgemeine Gesellschaft fuer Chemische Industrie m. b. H. Filed Feb. 21, 1927. 629,545.

German Patents

Refining

Aug. 11, 1927

Distilling Oils and Other Similar Products by a process in which the oil is mechanically finely atomized by rotating discs. K. Zimmerman, Berlin, Germany. Filed Sept. 19, 1924. 444,985.

Heating Oils and Hydrocarbons by means of electricity in a tank provided with a heating coil through which steam and electricity are passed. K. Hering, Nuernberg, Germany. Filed Jan. 31, 1922. 444,919.

Cracking Oils during continuous distillation, the oil being carried through a spiral tube within a packed tower. S. Seelig, Berlin, Germany. Filed April 17, 1926. 444,986.

Neutral, Deposit-Free, Air Resistant Lubricating Coal Tar Oils Miscible with Mineral Oils. "Rex" Mineraloelgesellschaft Stephan Book & Ziegler, Essen, Ruhr, Germany. Filed June 7, 1923. 444,958.

Miscellaneous

Aug. 11, 1927

Pipe Connection in which the packing ring is so shaped that the pressure of the fluid within the pipe tends to make the joint tighter. The packing is of rubber composition and is formed with an inward-projecting lip against which the pressure acts and forces this lip against joint so that it is closed more tightly. The Victaulic Co. Ltd., London, England. Filed April 18, 1925. 444,769.

Aug. 19, 1927

Air and Gas Separator in Liquid Pipe Lines in which the separator consists of a short piece of pipe and another piece of pipe of shorter length and lesser diameter projecting into it and forming the mouthpiece for the flow of liquid whereby a deaerating pipe is connected with the space between the two pipes. H. Larsen, Duesseldorf, Germany. Filed May 16, 1926. 444,783.

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

27695.—**Petroleum products (unspecified)** Sao Paulo, Brazil, agency.

27715.—**Fuel and diesel oil for bunkers,** London, England, agency.

27832.—**Cased kerosene,** Samarang, Java, purchase.

Ray Shaw to Change Agency

CHICAGO, Oct. 27. — Raymond Shaw, Chicago advertising man, soon will announce a change of agency connection, from the E. T. Sadler Co. to the Roche Advertising Co. The change will take place Nov. 1.

Mr. Shaw has been with the E. T. Sadler Co. for four years, part of which time he handled the national advertising of the Independent Oil Men of America, still keeping his connection with the agency. Before that he was associated with his brother, Harry Shaw, in the publication of Oil News of Galesburg, Ill.

a perfect oil for blending

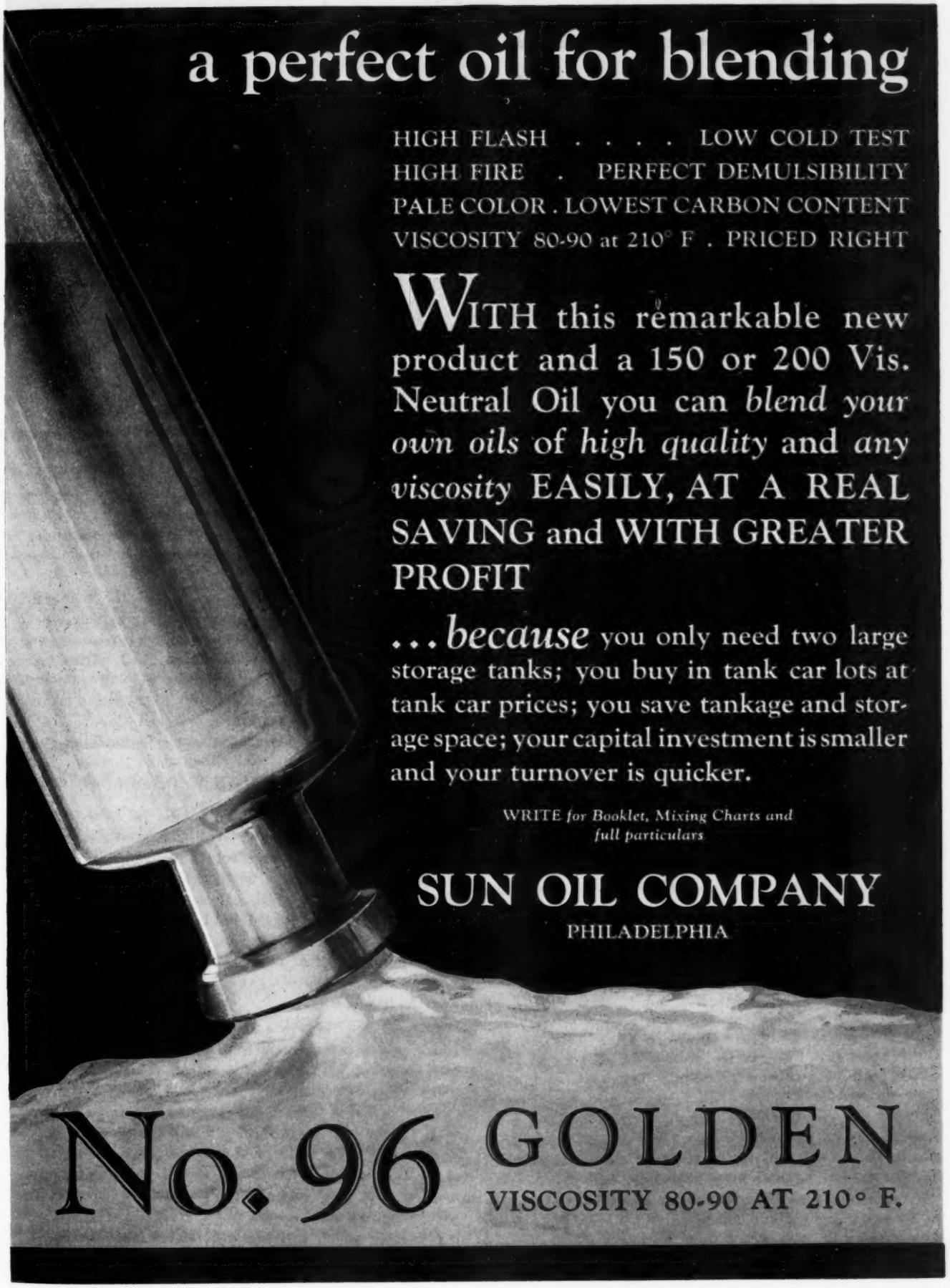
HIGH FLASH . . . . LOW COLD TEST
HIGH FIRE . PERFECT DEMULSIBILITY
PALE COLOR . LOWEST CARBON CONTENT
VISCOSITY 80-90 at 210° F . PRICED RIGHT

WITH this remarkable new product and a 150 or 200 Vis. Neutral Oil you can *blend your own oils of high quality* and *any viscosity* EASILY, AT A REAL SAVING and WITH GREATER PROFIT

. . . *because* you only need two large storage tanks; you buy in tank car lots at tank car prices; you save tankage and storage space; your capital investment is smaller and your turnover is quicker.

WRITE *for Booklet, Mixing Charts and full particulars*

SUN OIL COMPANY
PHILADELPHIA



No. 96 GOLDEN
VISCOSITY 80-90 AT 210° F.

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

Oiling the High Speed Car

A. LUDLOW CLAYDEN, research engineer of the Sun Oil Co. on page 59 of the Oct. 26 issue of NATIONAL PETROLEUM NEWS, comments on the story I wrote in the Oct. 12 issue about the oil requirements of the new high speed and hard driven cars. Mr. Clayden thinks that the problem of properly oiling these cars is mostly up to the automobile engineer rather than to the oil refiner.

I agree with him. I am sure that many oil companies are making oils suitable for the needs of these cars. I, do, however, think that the oil companies can come out and say so. I think the oil technologists, where they have not done so, should get the slant of the automobile designers and manufacturers as to the needs of such cars and make oil to meet these needs.

Why not ads reading something like this "If you drive a fine car habitually at speeds above 45 miles an hour, we have the oil for you?"

Another Rumor About the New Ford

AMONG various stories from various sources that are being heard about the new car that Mr. Ford is expected soon to bring out, is that it will have a very high compression pressure and will be sold to the public with a strong recommendation that Ethyl gasoline be used to run it. It is said that above 30 miles to the gallon will be promised the Ford driver if he uses Ethyl gas.

Important to the refiner and jobber if true. Also important to the low price filling operators.

High-Compression Cars and the Low Price Dealer

RIGHT in line with increase in compression pressures of the new cars arises an interesting question. What gasoline seller? We believe that the success the cut price dealer has had all over the country has been due to his ability to buy from the distressed refiner gasoline at fire-sale prices.

The gasoline he has been selling in general has been, I believe, around U. S. Motor specifications or lower. Up to recently almost any car would run satisfactorily on U. S. Motor gasoline, except perhaps in the winter, therefore, the low price dealer found a large sale for his cheap gasoline. But—as to the number of cars of relatively high compression constantly increases, and after their owners have found that their cars knock distressfully on the gasoline dispensed at the average low price station, will not said owners turn away from the low price station to the company-owned or other station where fuel that runs their engines more smoothly, is sold?

True, a larger and larger number of refiners are going to be making good anti-knock fuels but are they going to sell them at such prices that the low price dealer can cut below the prevailing market and make a profit? Is there going to be so much "distress" high anti-knock value fuel on the market? It seems to me that the premium price demanded for Ethyl gasoline is going to make it easier for the refiner to get a better price for his gasoline that ranks close up to the Ethyl standard.

It seems to me that the development of the demand for anti-knock fuel is going gradually to turn business away from the low price seller's pumps because his ability to do business profitably at low prices depends on his ability to take advantage of the refiners' necessity and buy cheaply.

Steel for Cracking Reaction Chambers

MUCH has been said about various methods of construction of vessels for use in cracking processes; of the relative merits of welded, riveted and forged containers but less thought has been given to the limitations of steel itself. The tendency in pressure cracking seems to be toward higher temperatures and higher pressures and it is this fact that has brought on the discussion as to the relative safety of vessels made by the different methods.

But it is known to metallurgists that the temperature to which refiners are most anxious to carry their cracking operations in order to obtain a faster rate of conversion is just about the temperature where steel begins to lose its strength rapidly. The question is, will some alloy steel be developed that will retain its strength at much higher temperatures than are practical now? As well as the question of making safe seams in cracking vessels.

Frankness Versus Concealment

TWO or three weeks ago I was in Detroit to call on several men in a large and conspicuously successful automobile manufacturing company. I was struck by the readiness with which I was received and the frankness with which my questions were answered. Some of the men I called on I had been personally acquainted with for some time. Others had never heard of me before. All of them answered my questions frankly, however. Apparently they would have treated anyone the same way.

I could not help mentally contrasting this attitude, which seems to be common to almost the entire automobile industry, with that of some oil companies. A good many of them are frank and open about their operations, too, but a good many stick to the theory that the way to succeed is to lock up all the knowledge they acquire and keep their technical men from divulging any of it at scientific meetings. There is apparently almost nothing that automobile engineers do not discuss freely with each other at meetings.

I wonder which attitude gets the farther in the long run. It is worth thinking about because the automobile industry is thriving mightily.

Our Industry — A Page of Facts and Personalities

National Petroleum News

By Paul Wagner

WALTER A. ENGLISH, widely known for his various United States Geological Survey bulletins on petroleum and as chief geologist in the San Joaquin Valley for the Standard Oil Co. of California, is opening personal offices in Los Angeles. Mr. English was graduated from the University of California, where he got his B. S. degree in 1910 and his M. S., in 1913. He served with the U. S. G. S., from 1913-1919; with the Vacuum Oil Co., and in consulting work from 1919-1922, since which time he has been identified with the Standard of California. Mr. English is a native of Los Angeles, where he was born in 1889.

* * *

THE tablet erected at the site of the McCleskey discovery well of Eastland county on the occasion of the Ranger homecoming, Oct. 21, last, bears the names of eight individuals whose names will go down in central west Texas petroleum history. They are W. K. Gordon, then vice president and general manager of the Texas Pacific Coal & Oil Co., which owned the well; the late Warren Wagner, drilling contractor; J. F. Campion, driller in charge Cull C. Moorman, Jack Phillips, T. W. Duncan, S. J. Whitson and John M. Gholson, all of whom participated in the blocking of the Texas Pacific's west Ranger district acreage.

* * *

OFFICIALS of the Standard Oil Co. of New Jersey, headed by George H. Jones, chairman of the board, and Walter C. Teagle, president, have returned to New York headquarters after their fall inspection trip to Mid-Continent and Texas fields. They were accompanied on part of the trip by officials of the associated Humble Oil & Refining Co.

* * *

I. G. HARMON, production vice president of Marland Oil Co. of Texas, Forth Worth, is recovering from injuries received some weeks ago while playing polo at Ponca City. He was not incapacitated at any time, but still shows the effects of his "spill."

* * *

SINCE the closing of the Fort Worth office of Philmack Oil Co., G. H. Collingwood, who was in charge, has returned to Tulsa. J. Marshall Brown, geologist, who had divided his time between San Angelo and Fort Worth, will represent the company in Texas at San Angelo.

R. W. DUNN, manager of the American Oil Co., at Hattiesburg, Miss., which distributes Pure Oil products in its trade territory, is elated by prospects for wildcatting now under way near Barnett, Miss. He advises that Pure Oil Co. is the first major oil interest to drill for oil in his part of the state, saying that derrick is up and equipment on the ground for the Barnett test.

THE accompanying snapshot shows a group of Sun Oil Co. employees identified with the land, geological and scouting departments, most of whom are widely known in circles where their work takes them. From left to right, they are: (standing)—C. C. Dickerson, manager San Antonio office; P. W. McFarland, San Antonio, geologist; John H. Langston, chief scout, Dallas; G. C. Francisco, Corpus Christi district scout; A. L. Jones, San Antonio geologist; Jess T. Hamilton, northeast Texas scout; J. E. Regent, San Antonio scout; Miss Cummings, San Antonio stenographer; Sam Gladney, El Dorado, Ark., field superintendent; John G. (Jack) Pew, land department, Dallas; Charles H. Row, San Antonio geologist; L. H. McBee, El Dorado, Ark., scout; (squatting, in foreground) W. Tappolet, San Antonio geologist; Martin A. Row, Laredo district scout.

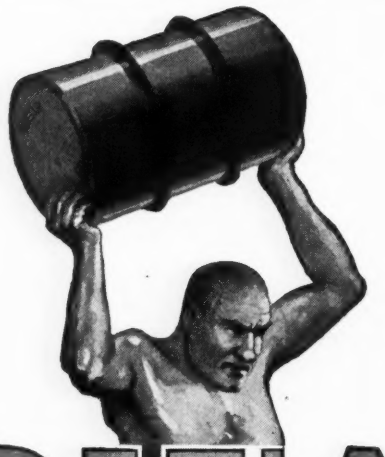
* * *

LEON J. PEPPERBERG, consulting geologist and engineer of Dallas, has been retained by the Columbia Management & Engineering Corp., New York City, for the organization of a geological department. The company is the management subsidiary of the Columbia Gas & Electric Co., which owns gas and oil properties in Ohio, Kentucky, Pennsylvania and West Virginia. John G. Pew is vice president and general manager. Mr. Pepperberg will spend about half his time in the east in connection with his new work.

DR. DOUGLAS R. SEMMES, recently a consulting geologist of Cisco, Texas, has rejoined the Geological Survey of Alabama, to revise his earlier bulletin on petroleum possibilities of the state. The earlier report was prepared several years ago, with J. E. Brantley as co-author. More recently, Dr. Semmes served the Royal Dutch-Shell interests in petroleum geological work, being stationed at Tampico for a time as chief geologist of the Mexican Eagle Oil Co., Ltd., (El Aguila).

* * *

A. C. RUBEL, petroleum engineer of the Union Oil Co. of California, Los Angeles, laid stress on the need for a glossary of terms applied to oil production methods when he discussed the subject at the Fort Worth meeting of the American Institute of Mining & Metallurgical Engineers. He reported, as a member of the A.I.M.E. committee dealing with such a glossary, that it was hoped to have it ready for action at the New York annual meeting next February. The trouble now found, he said is that production engineering terminology frequently overlaps and a clear understanding of discussions may be prevented by the confusion of meanings. Other members of the committee are R. Van A. Mills of the United States Bureau of Mines Experiment Station, Bartlesville; A. W. Ambrose of the Empire companies; and Professor Lester C. Uren of the University of California, who also is a regular contributor to NATIONAL PETROLEUM NEWS.



"DEFIANCE"

UNDER THE SKIN

THE skin of a steel barrel is the "specification". It covers gauge of steel, size, shape, style and perhaps color of paint to be used.

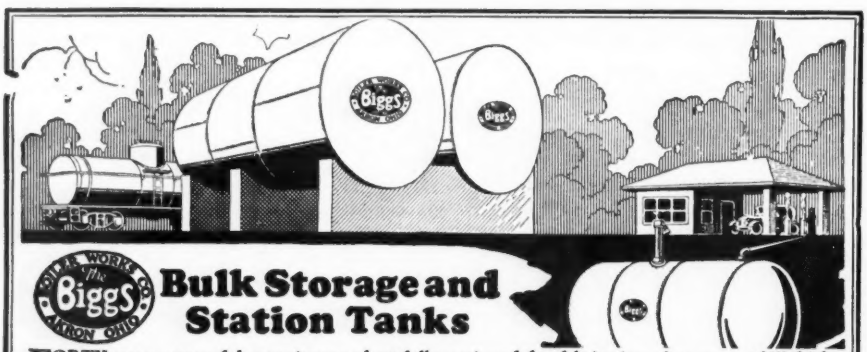
But under the "skin" you find the character, the integrity, the ideals of the steel barrel manufacturer—and these are more important than specifications.

Have you ever heard of a Defiance Steel Barrel not living up to *MORE* than the specifications called for?

Neither have we.

THE AMERICAN STEEL PACKAGE CO.

Defiance, Ohio



The Biggs Boiler Works Co. Akron, Ohio

Bulk Storage and Station Tanks

FORTY years successful experience; plant fully equipped for fabricating plate up to 1½" thick. Your specifications and inquiries are invited.

Pressure Stills for Cracking Process - Fractionating Towers - Dephlegmating Towers, Bubble Towers - Heat Exchangers - Agitators - Steam Stills - Crude Stills - Condenser Boxes, Run Down Tanks - Blending Tanks - Hemispherical Tanks - Blow Cases - Acid Tanks, Compounding Kettles - Storage Tanks to 80,000 Barrels - Smoke Stacks and Breechings, etc.

THE BIGGS BOILER WORKS CO., Buchtel and Bank Sts., Akron, O.; 300 Madison Av., New York

Personnel is Named For N.P.A. Work

WASHINGTON, Oct. 29.—Member refiners who will serve in various departments of the National Petroleum Association have just been appointed by E. M. Lyons, president, after consultation with the trustees. They are as follows:

Economics, Accounting and Statistics Department: P. S. Tarbox, Independent Refining Co., Oil City, Pa., trustee in charge. Councillors: F. W. Alcorn, The Pennzoil Co., Oil City; George S. Ayres, United Refining Co., Warren, Pa.; Clarence J. Fox, Emlenton Refining Co., Emlenton; M. I. Landa, Empire Refineries, Inc., New York; H. W. Ralph, Indian Refining Co., Inc., Lawrenceville, Ill. Associate councillor: C. J. Leroux, Paragon Refining Co., Toledo, O.

Legislation and Litigation: Sheldon Clark, Sinclair Refining Co., Chicago, trustee in charge. Councillors: George P. Brockway, Seneca Oil Works, Warren; Frank R. Coates, Henry L. Doherty & Co., New York; M. F. Cowden, Pennsylvania Oil Products Refining Co., Warren; Samuel Messer, James B. Berry Sons Co., Inc., Oil City; and J. Howard Pew, Sun Oil Co., Philadelphia.

Manufacture: Howard H. Greene, Kendall Refining Co., Bradford, trustee in charge. Councillors: D. W. Hovey, Waverly Oil Works, Pittsburgh; J. W. Griswold, Crew Levick Co., Philadelphia; Harry R. Lewis, Conewango Refining Co., Warren; J. B. Northrup, Ohio Valley Refining Co., St. Marys, W. Va.; and W. S. Zehrung, The Pennzoil Co. Associate Councillors: F. J. McGraw, Oil Creek Refining Co., Titusville, Pa.; Frank F. Moore, McKean County Refining Co., Bradford; T. M. Murphy, W. H. Daugherty & Son Refining Co., Petrolia, Pa.; B. B. Stroud, Bradford Gasoline Corp., Bradford; and A. B. Weingard, American Oil Works, Titusville.

Membership and Relations: O. P. Keeney, Keeney Oil Co., New York, trustee in charge. Councillors: Louis Carruth, Canfield Oil Co., Cleveland; John S. Cordell, Cities Service Refining Co., Boston; Lewis C. Jamieson, Viking Oil Corp., Clarendon; H. B. Seltzer, Tri-State Refining Co., Kenova, W. Va.; and A. C. Woodman, Acewood Petroleum Corp., New York.

Standards and Tests: A. W. Scott, Empire Oil Works, Inc., Oil City, trustee in charge. Councillors: E. E. Bown, Emery Mfg. Co., Bradford; F. W. Breth, Franklin Creek Refining Corp., Franklin, Pa.; McLean Houston, United Refining Co., Warren; E. M. Keely, Crew Levick Co., Philadelphia; R. C. Osterstrom, Pure Oil Co. Associate Councillor: W. T. Sieber, Waverly Oil Works Co., Pittsburgh.

Trade and Commerce: H. A. Logan,

New PRESTO Gasoline

Now available to Champlin Jobbers & Dealers —the IDEAL high compression motor fuel—

This ideal high compression gasoline—PRESTO—is the Champlin Refining Company's answer to the new trend in motor design. It is the 1927 model fuel, made to the same high standards of refinery practice which has won renown for Champlin straight-run gasoline, and Champlin oils.

The world's largest independently owned refinery manufactures PRESTO gasoline from ONE STANDARD GRADE OF CRUDE—a select Mid-Continent paraffin base crude, and further insures uniformity of product, and conformity to specification, by analyzing every car of gasoline before it leaves the refinery.

PRESTO Gasoline contains anti-knock properties which will be eagerly welcomed by owners of high compression motors, and the better performance of motors fueled with this clean-burning, powerful, and quick starting gasoline will win thousands.

· NEW ·
PRESTO
GASOLINE

The Ideal high compression motor fuel

PRESTO is being announced through national advertising. Prepare for the demand which will result by placing reservations early.

PRESTO Gasoline is a product of the **CHAMPLIN REFINING COMPANY** — Enid, Oklahoma

GULF
Refining
Company

General Sales Offices
PITTSBURGH, PA.

District Sales Offices
New York, Houston, Atlanta, Boston, New Orleans, Tampa, Philadelphia, Louisville

REFINERS OF OKLAHOMA
TEXAS AND LOUISIANA

PETROLEUM

REFINED OIL
GASOLINE
NAPHTHA
GAS OILS
PARAFFINE WAX
PETROLEUM COKE

Fuel Oil--Lubricating Oils

CYLINDER ENGINE
CORDAGE

RED AND PALE PARAFFINE OILS

United Refining Co., Warren, trustee in charge. Councillors: D. J. Cavanaugh, The Pennzoil Co., Oil City; L. L. Long, Waverly Oil Works Co.; W. A. McCafferty, Emery Mfg. Co.; Harry W. Schmidt, United Refining Co.; and G. G. Woodruff, Roxana Petroleum Corp. Associate Councillors: A. F. Anderton, Continental Refining Co., Oil City; R. G. Browne, Great Western Oil Co., Cleveland, O.; Myron Evans, Island Petroleum Co., Baltimore; Wayne B. Glenn, Pennsylvania Refining Co., Karns City, Pa.; Frank C. Hart, Hartol Products Corp., New York; T. C. Hawkey, Tidioute Refining Co., Tidioute, Pa.; James Lewis, Bradford Oil Refining Co., Bradford; and G. R. Nutty, Gulf Refining Co., Pittsburgh.

Traffic and Transportation: Frank B. Fretter, National Refining Co., Cleveland, trustee in charge. Councillors: D. E. Carrier, The Pennzoil Co.; E. E. Harrington, National Refining Co.; Henry Hausemann, Pure Oil Co.; W. W. Klingensmith, Transcontinental Oil Co., Pittsburgh; and J. M. O'Day, Sinclair Refining Co., Chicago.

Welfare and Insurance: R. A. Wotowitch, Henry L. Doherty & Co., New York, trustee in charge. Councillors: Frank G. Benedict, Sinclair Refining Co.; Earle M. Craig, Freedom Oil Works Co., Freedom, Pa.; Harold Eaton, Valvoline Oil Corp., New York; Frank A. Epps, Tide Water Oil Co., New York; and J. W. Fawcett, Crystal Oil Works, Oil City. Associate Councillors: Houston Dunn, National Petroleum Mutual Fire Insurance Co.; H. F. Heilman, Levi Smith Refining Co., Clarendon; James H. Herbert, Conewango Refining Co., Warren; J. B. Miller, A. D. Miller Sons Co., Pittsburgh; S. D. Tibbits, Warr-Penn Refining Co., Warren; and F. B. von Tacky, Titusville Oil Works, Titusville.

Well-Known Men Join Yarg Producing

DENVER, Colo.—D. Basil O'Connor, law partner of Franklin D. Roosevelt, former Assistant Secretary of the Navy Department, and Edwin B. Hopkins, well known oil geologist of New York, have recently acquired a large interest in Yarg Producing & Refining Corp., with headquarters in the Patterson Bldg. here.

This company is the largest holder of lands on the Iles structure, in Moffat county, Colo., where drilling is now going on, according to H. M. Ruddick, vice president.

Chicago Pneumatic Tool Co., 6 East 44th St., New York City, has moved its Cleveland district sales office, effective Nov. 1, from 1241 E. 49th St., to the Union Trust Bldg., Cleveland, O.

New Patents

Oct. 11

REFINING

Vaporizer.—Frank A. Milliff and John A. Milliff, Los Angeles, Calif. Filed Jan. 11, 1926. No. 1,644,937.

Process for Converting Oil.—Walter M. Cross, Kansas City, Mo., assignor to Gasoline Products Co., Inc., New York, N. Y. Filed April 3, 1923. No. 1,644,991.

Condensing Apparatus.—Fred G. Grell, San Antonio, Tex. Filed Aug. 6, 1926. No. 1,645,481.

Treating Hydrocarbon Oils.—Ralph C. Holmes, New York, N. Y.; Frederick T. Manley, Houston and Otto Behimer, Port Arthur, Tex., assignors to The Texas Co., New York, N. Y. Filed Dec. 10, 1923. No. 1,646,380.

PRODUCING

Apparatus for Raising Oil from Wells.—Bruno Schweiger, Erkelenz, Germany. Filed Dec. 15, 1926. No. 1,644,748.

Core Barrel.—John T. Phipps, Huntington Park, Calif. Filed Aug. 23, 1926. No. 1,644,947.

Device for Recovering Casing from Wells.—Myron Macy Kinley, Tulsa, Okla. Filed Feb. 4, 1926. No. 1,645,010.

Casing Coupler.—Curtis M. Claypoole and Alvin J. Eshenbaugh, Butler, Pa. Filed Sept. 5, 1925. No. 1,645,042.

Oil-Well-Plunger Attachment and Sucker-Rod Connection.—Chester C. Hosmer, Huntington Beach, and Samuel E. Furman, Long Beach, Calif. Filed Jan. 15, 1924. No. 1,645,428.

Fishing Tool—Floyd H. Stafford, Eastland, Tex. Filed Feb. 7, 1927. No. 1,645,461.

Combination Clamp.—Elmer R. Thomas, Shidler, Okla., assignor of one-half to Victor Harris, Shidler, Okla. Filed July 27, 1926. No. 1,645,463.

MISCELLANEOUS

Fuel Composition.—Samuel P. Marley, Pittsburgh, and William A. Gruse, Wilkinsburg, Pa., assignors to Gulf Refining Co., Pittsburgh, Pa. Filed July 28, 1924. No. 1,645,109.

Process of Solidifying Aluminum Chloride—Clifford W. Humphrey, Red Bank, N. J., and Donald S. McKittrick, Oakland, Calif., assignors to Clifford W. Humphrey, San Francisco, Calif., and Henry I. Lea, Santa Monica, Calif. Filed May 29, 1923. No. 1,645,142.

Process of Purifying Aluminum Chloride.—Clifford W. Humphrey, Red Bank, N. J., and Donald S. McKittrick, Oakland, Calif., assignor to said Humphrey and Henry I. Lea, Santa Monica, Calif. Filed May 31, 1923. No. 1,645,143.

Apparatus for Purifying and Solidifying Aluminum Chloride.—Clifford W. Humphrey, Red Bank, N. J., and Donald S. McKittrick, Oakland, Calif., assignors to said Humphrey and Henry I. Lea, Santa Monica, Calif. Filed May 31, 1923. No. 1,645,144.

Storage Tank for Gases and Volatile Liquids.—John H. Wiggins, Bartlesville, Okla. Filed Aug. 30, 1926. No. 1,645,313.

Manufacture of Tetra-Ethyl Lead.—Herbert W. Daudt, Penns Grove, Alfred E. Parmelee, Carneys Point, and William S. Calcott, Penns Grove, N. J., assignors to E. I. du Pont de Nemours & Co., Wilmington, Del. Filed Nov. 2, 1925. No. 1,645,375.

Production of Tetra-Alkyl Lead—Kenneth P. Monroe, Penns Grove, N. J., assignor to E. I. du Pont de Nemours & Co., Wilmington, Del. Filed Oct. 23, 1922. No. 1,645,389.

Process of Making Tetra-Alkyl Lead.—Kenneth P. Monroe, Penns Grove, N. J., assignor to E. I. du Pont de Nemours & Co., Wilmington, Del. Filed April 19, 1924. No. 1,645,390.

Automatic Trip Valve for Storage Tanks.—Bige Gregory and Clarence C. Mitchell, Vernon, Tex., assignors of three-sixteenths to Jess Love, three-sixteenths to E. L. Isham, and one-fourth to Charlie Thrasher, Wilbarger County, Tex. Filed April 26, 1926. No. 1,645,480.

Show 'em the price

BE *different* in your gas station advertising. *Feature your price* with electric lighted figures and gain the *extra* attention from approaching traffic that this distinctive advertising will secure for you. Use the interchangeable Flexlume illuminated figures.

Write us for color sketch and price quotation—without obligation—for either a Flexlume Electric Display or Flexlume Interchangeable Electric Figures—or both—to help make business grow for your station. Flexlume Corporation, 1126 Military Road, Buffalo, N. Y. Or 'phone the Flexlume office in any principal city.

Factories also at Detroit, Los Angeles, Oakland, Calif. and Toronto, Can.

FLEXLUME

FLEXLUME
ELECTRIC DISPLAYS

NON-CHATTER
OIL FOR FORDS

The manufacture and sale of Ford Non-Chatter Oil is *covered by a patent* (the Sorensen Patent). Do you know whether or not you are infringing this?

We can *protect* you against infringement, by showing you how to make the finest NON-CHATTER FORD OIL with full protection under the Sorensen Patent. Send for full information.

NATIONAL OIL PRODUCTS CO.
HARRISON, N. J., U. S. A.
CHICAGO BOSTON CHARLOTTE

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All sizes and lengths of Triplexd Hose are carried in stock in these cities:

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ATLANTA: P. O. Box 1343
RICHMOND: P. O. Box 514
BROOKLYN: 236 Tillary St.
BOSTON: 142 Berkeley St.
PITTSBURGH: 341 Second Avenue
CLEVELAND: 1302 Ontario Street, North
CINCINNATI: 450 East Pearl Street
DETROIT: 5459 Grand River Avenue
ST. LOUIS: 1621 Pine Street
KANSAS CITY: 13th Street and Eastern Ave.
CHICAGO: 1213 W. Washington Blvd.
SAN ANTONIO: 1401 South Flores Street
HOUSTON: 700 N. San Jacinto Street
EL PASO: 1020 East Overland Street
NEW ORLEANS: 211 South Peters Street
MINNEAPOLIS: 900 Sixth Ave., S. E.
DENVER: 4800 York Street
SAN FRANCISCO: 873 Mills Building
LOS ANGELES: 1625 South Hill Street
SEATTLE: 67 Columbia St.
OMAHA: 13th & Willis Sts.
TORONTO, CAN.: Dunlop Tire & Rubber Goods Company, Limited
LONDON, ENG.: J. Bazley-White, 3 Love Lane, Eastcheap, E. C. 3

METAL HOSE & TUBING CO. INCORPORATED 236 Tillary Street BROOKLYN, N.Y.

New Equipment to Improve Plants

Personal Notes of the Manufacturers

National Petroleum News

Sullivan Machinery Co., 122 S. Michigan Ave., Chicago, has off the press Bulletin 83-G on the new Sullivan high pressure gas and air lift compressor designed for pressures from 250 to 1000 pounds per square inch, and especially for use in high pressure gas and air lift work in the Mid-Continent fields.

The machines are two-stage compressors, low pressure cylinder being horizontal and high pressure vertical. They are adapted to varying forms of drive, including motor or gasoline, or steam engine.

* * *

Butler Mfg. Co., Kansas City, Mo., has just completed the installation of an extension to its present building here, which will be used as a welding department and for storing raw materials. The structures are the company's own ready-made steel buildings. The extension was 90 feet wide and 204 feet long, which makes the total length of the building 330 feet.

The company owns over nine acres in Kansas City, five acres of which is floor space under cover.

* * *

The Lincoln Electric Co., Cleveland. O., has been assigned patents issued to James F. Lincoln on welded steel motor frames in which welded steel construction replaces castings. The construction is an assembly of hot rolled steel parts welded into the equivalent of a casting. It is claimed that the welded steel method gives a practically unbreakable frame, lighter weight and better ventilation, according to the company.

* * *

Bethlehem Steel Co., Bethlehem, Pa., has published Catalog devoted to Bethlehem pulverizers which it claims operate at a lower power cost and have lower maintenance cost per ton of capacity than any other machine.

Another feature of the pulverizer, according to the company, is that there is no contamination of the material being pulverized. It has an air separation system, bearings are protected from grit and dust and no shutdowns are necessary for lubrication.

Details of operation and construction are furnished.

* * *

Wilson Welder & Metals Co., Hoboken, N. J. has reprinted an article by T. E. DePew, of "The Welding Engineer" on the economy effected by arc welding in the New York Edison Co.'s East River generating station at New York City. Lower building, operating and maintenance costs are claimed to result from arc welding. Welding of smoke stacks will constitute one of the greatest savings in maintenance costs, while furnace maintenance cost will be reduced and steam producing capacity of boilers will be increased due to the completely water-cooled boiler furnace wall which has been used, the article states.

* * *

Hughes Tool Co., Houston, Tex., has filed suit in federal court at Tulsa against the International Supply Co., charging infringement by the latter of patents owned by the Hughes company covering the cone cutter for rock bits. It is the contention of the plaintiff that the roller bearing cones sold by the International and manufactured by the U. S. Tool Co., Los Angeles, are an infringement of Hughes patents.

* * *

The Brown Instrument Co., Philadelphia, Pa., has published a folder explaining how automatic control in industrial operations is labor-saving and economical. Automatic still and tower temperature control in oil refining is necessary to economy and the highly volatile, anti-knock motor fuels made today are dependent largely on close temperature regulation as is effected by Brown automatic control pyrometers, the bulletin states.

A Brown automatic control pressure gauge governs the regulation of air blast to the oil burners, at the plant of the U. S. Cast Iron Pipe & Foundry Co. at Burlington, N. J., promoting efficient combustion, the Brown company says.

The Brown Instrument Co. on Sept. 1 opened an office in the Mutual Bldg. at Kansas City, Mo. F. M. Poole is district manager.

* * *

Curtis Pneumatic Machinery Co., St. Louis, Mo., will exhibit at the A.E.A. show this fall improved models in its regular line and also these new additions to its line of service station equipment: paint spray compressor unit; 1/3 h.p. automatic tire inflation unit; hydraulic car washer; and working model of the Curtis rotating lift, oil-locked.

The company has off the press a 16-page bulletin on its service station equipment, including descriptions, illustrations and methods of operation of its car washers, air compressors, air stands, and auto lifts. The Curtis auto lift, the company claims, is hydraulic and is supported by oil which is incompressible, preventing the load from fluctuating due to the fact that there is no air in the cylinder.

New Stations Building

Dover, O.—W. G. Mallernee Oil Co. is completing filling station and barbecue.

Sandusky, O.—Columbia Refining Co. will build filling station.

Bellaire, O.—Standard Oil Co. of Ohio is completing filling station.

Bellaire, O.—Pure Oil Co. is erecting bulk station.

Defiance, O.—Sinclair Refining Co. will build filling station.

Hancock, Mich.—Public Garage Co. is erecting building which will include filling station.

Sabetha, Kan.—Frank McCool is building filling station.

Madison, Wis.—Capital Oil Co. will erect filling station.

Wymore, Neb.—Standard Oil Co. of Nebraska is completing filling station.

Elkhorn, Wis.—O'Neil Oil Co. will erect filling station.

San Antonio, Tex.—William O. Rieden & Sons will build filling station.

Claremore, Okla.—Rummage Oil Co. is completing filling station.

Laddonia, Mo.—Floyd Rogers is building filling station.

Fort Smith, Ark.—Tom Norris seeks permit for filling station.

Cameron, Mo.—H. F. Williams will build another filling station.

Olathe, Kan.—Mike Miller will build garage and filling station.

Platteburg, Mo.—Joe H. Taylor will build filling station.

New Milford, Conn.—Clarence Wise is building garage and filling station.

Belle Plain, Ia.—Ed. Niebes will build service station.

Toronto, Ont.—Sterling Coal Co., Ltd., will build several service stations which will be operated in connection with its coal yards.

Davis, Ill.—N. B. Barningham will erect filling station.

Greenfield, Ind.—Roxana Petroleum Corp. is building bulk station.

Benton, Ark.—Walter Caldwell will build filling station.

Macon, Ga.—Wofford Oil Co. seeks permit for filling station.

Conneaut, O.—Standard Oil Co. of Ohio seeks site for filling station.

Savannah, Ga.—American Tire Service will erect filling station.

Troy, N. Y.—Ward Bros. are building filling station.

Hutchinson, Kan.—C. H. Havens will build filling station.

Cimarron, Kan.—Golden Rule Oil Co. will build filling station.

Bismarck, N. D.—Howard Gramling will build filling station.

Cabaniss Goes South For Health

CHICAGO, Oct. 28.—C. F. Cabaniss has resigned from the sales force in the Chicago office of American Petroleum Products Co. He has been in ill health for a number of months and is going to Miami, Florida for two months to recuperate.

WHEN YOU WANT QUALITY AND REASONABLE PRICES.

Mixed Carload in Drums—or Tank Cars

"INVINCIBLE" MOTOR OILS

100% Pennsylvania or Western Blends

To Match Any Oil Made

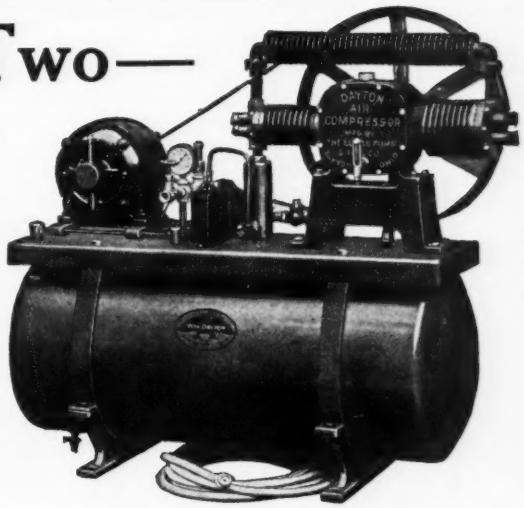
WRITE A. D. MILLER SONS' CO.

Millers Oil Refining Works

PITTSBURGH, PENNA.

Oldest Pennsylvania Refiners

Air for Two—



You and your customer—the Dayton Compressor provides plenty for both. For your customer's tires and for your work in painting, spraying and lifting, plenty of air is needed. No matter how much you use, the Dayton has more ready and waiting under unfailing pressure.

It Takes The G-8 To Do It

The G-8 is the big boy that says "Use all you want." There's a compressor that's built right and shows it on the job. Constant service, steady pressure, no trouble—just another way of saying you use a G-8.

Capacity 8 cubic feet per minute.

2 H. P. Motor
60 gallon tank.

Other Needs—Other Styles

There is a whole "G" family to meet your needs. Whatever your requirements are, there is a Dayton Compressor that fills them. The right size means economy.

There are seven in the family. The smallest produces 2½ cubic feet of clean air per minute. The big one, G-8 produces 8 cubic feet.

This is Important

The Dayton Air Compressor has fewer parts to get out of order—no connecting rod, no crosshead pin, no bolts, no cotter pins, no scored cyclinder, no breakdowns. Its simple construction gives more air and less trouble.

Every Dayton Compressor furnishes its rated capacity of clean air. A little oil keeps it trouble free for years.

What Are Your Needs?

You have a right to expect steady, economical service of a compressor. The right size and type of Dayton will give it to you.

What are your compressed air requirements? Have you a lift? Do you have a spray?

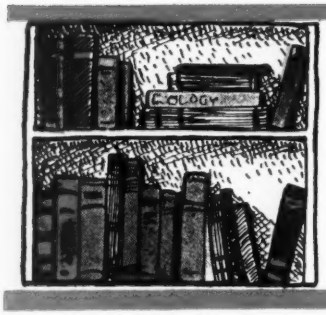
Tell us your problems. Our engineers, without charge, will advise you what size compressor will give you all the air you need at the least cost.

Send for Bulletin

The LUCAS PUMP & TOOL COMPANY DAYTON, OHIO.

DAYTON AIR COMPRESSORS

425 Valley St. Dayton, Ohio. U. S. A.



Oil Man's Bookshelf

Where you and industry are identical—

Every successful business is constantly on the lookout to improve its machinery and methods.

You, as an individual, in order to progress must devote a reasonable part of your time to ***improving your mind.***

Good books on various phases of the oil industry will improve your mind, and pay you big dividends.

ACCOUNTING for the PETROLEUM INDUSTRY

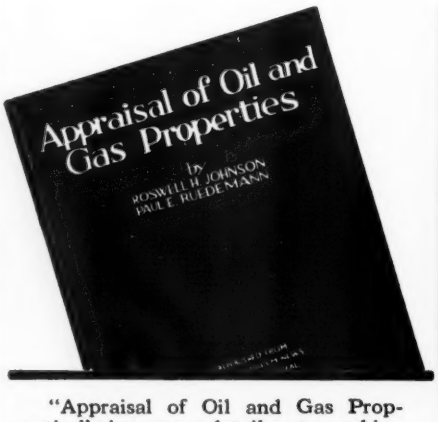
"Accounting for the Petroleum Industry" by D. F. Morland and R. W. McKee, is one of the most practical and comprehensive works on accounting principles and procedure for all branches of the oil industry—production, transportation and storage, refining, marketing.

Accounting for each branch is discussed separately; description of technical practices is given, and the accounting problem to be solved in each activity is set forth together with sample forms in use; tables for depreciation rates, etc.

For refinery accounting this book recommends the "weighted selling ratio method" which is described in detail and which has the advantage of determining for every product a cost which will allow for a reasonable profit when disposition is made thereof.

"Accounting for the Petroleum Industry" is carefully prepared and the most practical book written on the subject of accounting for the oil business.

304 pages—Price $4.



"Appraisal of Oil and Gas Properties" gives more detail as to working methods, with drawings and charts, than has ever been offered the oil industry in a work on appraisal.

The book contains 24 chapters as follows:

Kinds and Purposes of Appraisal; Definitions; Organization of Work; Calculation of Past and Present Yield; Line and Underground Loss; Estimation of Future Yield of Producing Wells—Methods and Decline Curves—Ultimate and Total Recovery—Undeveloped Areas, Proven and Unproven—Refinements; Prediction of Future Prices; Prediction of Future Operating Costs; Future Costs of Development and Improvements; Discount Factor in Annual Analytical Appraisals; Investment Risk; Computations for Appraisal of Wells; Valuation of Undeveloped Acreage—of Physical Property—of Intangibles; Computation of Depletion—of Depreciations; The General Report; Office Records; Appraisal for Fixing Rates; Appraisal of Casinghead Gasoline Production.

Only a limited number of these books has been printed. *Send for your copy today.* Price $4.

LUBRICATING OIL SALESMAN'S PRIMER

The "Lubricating Oil Salesman's Primer" is a new book by Claude Ettele, associated with one of the big oil companies in this country. The author's purpose is "to properly present a first view of the subject of lubrication and encourage the young salesman to study advanced works without which he will be unable to develop maximum efficiency in the services of his employers and of his customers."

The book takes up the manufacture of various lubricating oils and greases; tests by which oil and grease specifications are written; general discussion of lubrication problems in cylinders, turbines, internal combustion engines; power transmission machinery such as shafting; wire ropes; belts, gears, bearings, etc., driven machines such as air compressors, pneumatic tools, ice machinery, machine tools, textile machinery, paper mills, mine and quarry machinery.

"Lubricating Oil Salesman's Primer" also gives a standard line of lubricants, and specifies which oils or greases are applicable to the various kinds of machinery. This book is well worth its price of $3. Send for your copy today!

—*Cut out and mail*—

National Petroleum News,
Room 707, 1213 W. 3rd St., Cleveland, Ohio.

I want the books checked below. Enclosed is check or money order for $_____

- ☐ *Accounting for the Petroleum Industry—$4*
- ☐ *Appraisal of Oil and Gas Properties—$4*
- ☐ *Lubricating Oil Salesman's Primer—$3*

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ON THE LAZY BENCH

National Petroleum News

Oh, Well! Who Wants to Work for Marland, Anyhow?

PONCA CITY, Okla., Oct. 26.—Kissing is more dangerous in winter than in summer.

Such is the verdict of Dr. Thomas McElroy, chief of the medical clinic of the Marland Refining Company, who has just issued a warning to Marland employees that those juicy, soul-satisfying kisses of two-reel length should be postponed until warmer weather arrives.

Of course, flaming youth cannot be expected to live through an entire winter without a single smack, but Dr. McElroy warns that cold weather kissing should be confined to a light peck on the lips, if it must be on the lips.

Dr. McElroy explains his warning by pointing to the fact that the common cold is more common in winter than in summer. The germs of colds leave the body in the secretions of the mouth and nose, and they enter the body through the same routes. That's where the danger of the "WET" kiss come in.

Suppose a maiden fair has a slight cold. She condescends to place a warm, wet kiss upon the feverish lips of her boy friend and his body resistance is less efficient than that of the generous maiden. The germs spread and multiply. A severe cold, or even pneumonia, may result.

Passionate youth may be reluctant to go through the winter without an occasional kiss, but it is more certain that he will live without it, according to Dr. McElroy's diagnosis. Anyway, the 4,000 employees of the Marland Refining Company have been warned and there is every reason to believe that milady's lipstick will last much longer this winter.—(Publicity material from Marland Refining Co.)

* * *

"Willie," said his mother, "I wish you would run across the street and see how old Mrs. Brown is this morning."

A few minutes later Willie returned and reported:

"Mrs. Brown says it's none of your business how old she is."

—*Union Oil Bulletin*

* * *

"Do you know the difference between a taxi and a trolley?"

"No, what is it?"

"Good—we'll take a trolley—there isn't any difference."—*Barnsdall.*

"Billy, do you know what happens to little boys who tell lies?"

"Sure, they ride for half-fare."

—*Stanolind Record*

* * *

A Crooked Deal

Polly: "Really, we wouldn't be taking this trip to Europe if Uncle John hadn't cleaned up that fortune in crooked dough."

Kate: "What was he, anyway, a counterfeiter?"

Polly: "Oh, no, a pretzel manufacturer."—*Independent Topics.*

* * *

He Knocks Her Flat

Judge: "Did you or did you not strike the woman?"

Landlord: "Your Honor, I only remarked that the wall paper in her apartment bore fingerprints."

Judge: "Two years for knocking her flat. Next case."—*Pure Oil News.*

* * *

A man traveling to New York by automobile, being near the State line between Virginia and North Carolina, wished to know exactly whether he had crossed.

Seeing a negro girl on the side of the road, he called out:

"Say, is this Virginia?"

She replied, "No, sah; this here's Lucy."—*Stanolind Record.*

* * *

Teacher: "Tell me the name of an animal peculiar to Australia."

Boy: "The rhinoceros, sir."

"But that's not found in Australia."

"Well, sir, that's exactly why it would be peculiar."—*The Booster.*

* * *

B Ware

On a farm in south Georgia is posted this sign:

"Trespaser's will be persekuted to the full extend of 2 mean mongrul dorgs which ain't never been overly soshibil with strangers and 1 dubbel barled shot-gun, which ain't loaded with no sofy pillers. Dam, if I ain't tired from this hel raisin' on my proputy."—*Pure Oil News.*

* * *

Tommy, who had no great love for soap and water, was observed by his mother washing the forefinger of his right hand. "What's the idea of washing only one finger?" she inquired.

"The boy next door has asked me to come over and feel his baby sister's new tooth," explained Tommy.

—*Stanolind Record*

* * *

"What is a detour?"

"The roughest distance between two points."—*Stanolind Record.*

Special Muleskin Folio

Your Name in Gold FREE

Complete Net $7.50

362K—Special made folio from heavy double weight muleskin in handsome shark grain. Has three pockets, heavy leather straps and handle, good lock, bottom reinforced with steel studs. Inner case contains six 4-oz. bottles, partitioned separately, lined with red velvet. Metal capped corks furnished. Case also contains five grease jars.

Other styles in our FREE Catalog

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Builders of Sales Luggage

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THREE MODERN REFINERIES:
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operated on Ohio Crude
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operated on Midcontinent Crude

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NATIONAL BLDG., CLEVELAND, O.

This SIGN is a *Satisfaction Signal* to motorists!

Authorized Dealer

SINCLAIR OPALINE REG. U. S. PAT. OFF. **MOTOR OIL**

Seals Power at every Degree of Wear

WHEN a motorist buys oil at the station which displays this sign, he gets *correct lubrication*—and the Dealer gets more steady business, because the motorist is satisfied!

The method for recommending Opaline Motor Oil (used only by Authorized Opaline Dealers) is an outstanding success! That's because it is the correct method, based on the Sinclair Law of Lubrication. It provides different grades of Opaline to fit the different degrees of wear in automobile engines, as indicated by the mileage on motorists' speedometers. Opaline Dealers ask the motor oil customer his mileage—consult the Sinclair Recommendation Index, and then give him the correct grade. The motorist feels the difference in his car immediately and remembers which Dealer gave him that difference!

May we tell you about this successful method of selling *correct lubrication* with the full line of Opaline Motor Oils?

SINCLAIR REFINING COMPANY, INC.

Also Makers of Sinclair Gasoline and H-C Gasoline

45 NASSAU STREET, NEW YORK

Atlanta Boston Chicago Houston Kansas City

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Refinery - Tank Wagon Markets

National Petroleum News

Mid-Continent Interest Centers In Export Demand for Gasoline

Staff Special
TULSA, Oct. 29

EXPORT buyers for the third consecutive week have furnished the major interest in the Mid-Continent refinery market. Except for fractionally lower prices on fuel oils, the domestic market was essentially the same as a week ago.

An export company late this week bought around 100 cars of 64-66, 390 end point, and 64-66, 375 e.p. gasoline in north Texas at 6.50 and 6.625 cents, respectively. The company was understood to be in the market for 1,500,000 gallons, and probably would have to enter the Oklahoma territory in order to complete the purchases. The gasoline was to be shipped within the next two weeks, it was reported.

At least two other export companies were reported to be inquiring for goods but so far as could be ascertained no purchases were made.

An Oklahoma refiner late in the week sold an export company 50 cars of 41-43 water white kerosene at a price around 4.50 cents a gallon. The refiner said his plants had been making more high gravity gasolines recently, and he found his kerosene stocks larger than he desired at this season. Another large company on the Gulf Coast earlier in the week inquired for a quantity of kerosene from Oklahoma and Texas refiners, but confirmation of purchases was lacking today.

Domestic gasoline business on the whole can be said to have been comparatively good the last week. Favorable motoring weather has been reported virtually all week in all the consuming territory, and refiners have been getting a fair volume of spot orders, while contract ordering has been good. Jobbers apparently were taking no chances on the weather this late in the season, however, and were ordering only immediate requirements and urging rush shipment.

The 58-60 U. S. Motor grade has been more active than other grades. While the higher gravity gasolines probably have been moving in as good a volume as formerly, the fact that more refiners now are making these grades has caused goods to be more freely offered and prices have moved fractionally lower in Oklahoma.

The higher gravities in Texas, however, are in excellent shape, according to reports from that area. Refiners have enough export and domestic orders on their books to keep them busy for the next two or three weeks.

Natural gasolines were comparatively quiet all week. No large export orders were reported in the field. Several manufacturers, however, earlier in the month had booked most of their production and were not pressed to move goods.

On the other hand a few late in the week were anxious to get their October production out of the way by Nov. 1 and were pushing their odd cars as rapidly as possible. This was particularly true of grade AA, which apparently is more plentiful at present than other grades.

Several manufacturers reported late in the week that inquiries for grades BB and C were more numerous, and sales of grade BB for movement out of Texas to eastern points had been made up to 5.875 cents. Odd cars of grade AA also moved for resale out of the same territory at 5.875 cents.

Manufacturers were receiving a few inquiries late in the week for shipment next month. Prices quoted were about in line with present market. More active buying, however, was generally expected early next week.

DOMESTIC buying of kerosene has been only fair, several refiners reported, but except for a few carloads little goods have been available for spot market shipment. North Texas refiners especially have had little kerosene to offer, even though they are making high gravity gasolines primarily. Reports from the Gulf coast and central Texas indicate that refiners in that district who have been running west Texas crude, have found it difficult to get a good yield of kerosene and that treating costs have been prohibitive at the present market, hence they have had to look to north Texas and Oklahoma refiners to help them supply their own domestic trade.

The old saying that good gasoline business means poor distillate business has held true this week. While the weather has been favorable for gasoline, distillate orders have been slower. The bulk of shipments at present have been on contract. Prices have shown no changes, however, the low flash 38-40 straw distillate bringing 3.25 cents a gallon, Group 3. One or two refiners in Kansas have reduced their prices slightly to move some excess goods.

GAS oils also have not changed in prices, but movement has been light. A few inquiries from industrial users were reported in the field the first of this week. With many refiners keeping their cracking units at low production more gas oil now is being offered on the market than has been the case in previous years.

Fuel oils have been moving more slowly than had been expected and prices are lower. Inquiries for November shipments of fuel oil were not so good as many had expected. One large buyer said today he had bought 28-30 gravity fuel oil both for spot and over November at 92.5 cents up, while quotations had been made on 26-28 gravity goods as low as 85 cents a barrel.

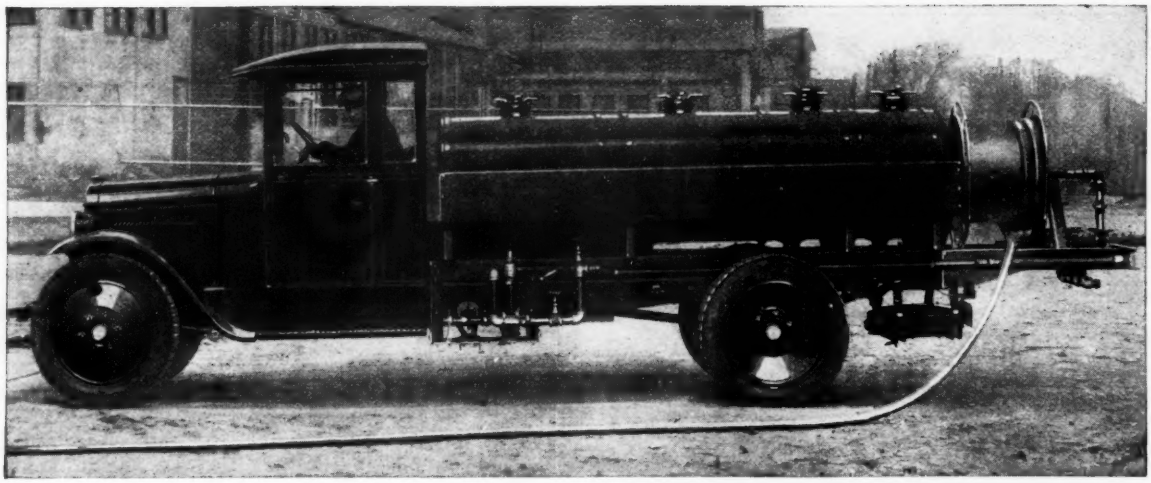
One refiner said he had been offered 87.5 cents for 26-28 gravity fuel over November, but that he had hesitated to accept the order, thinking the market would advance. On the other hand, he said he had run into competition at prices virtually the same as the spot market.

Inquiries for zero cold test fuel oils improved a little this week. These oils have been bringing slightly better prices. There is only a small volume of zero fuel oils produced in Oklahoma.

Oklahoma neutral oils and cylinder stocks are unchanged. Competition from Texas refiners is reported from the Chicago district. Wax prices were unchanged at 2.75 to 3.125 cents a pound.

Gulf Lubes Unchanged

HOUSTON, Oct. 29.—Gulf Coastal lubricant prices are unchanged. Manufacturers report stocks are not excessive but ample to meet demand. Premium grades are moving best.



Heil 500 gallon, 4 compartment fuel oil tank mounted on Graham Bros. 2-ton chassis. Notice the Heil pump unit mounted on the side and the hose reel at rear.

The name HEIL protects your SERVICE

When wintry blasts rattle the windows and your customer needs oil—he'll want quick, certain delivery. Will your equipment carry the load? Now—while there's still time—look it over. If your tanks carry the name Heil they'll carry your loads and protect your service. Heil is the leader in building fuel oil tanks and fuel oil tank pump units. Write for the new Heil fuel oil tank Bulletin 176 and blueprints describing the Heil fuel oil pump units.

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1238-50 26th Ave. **Milwaukee, Wis.**

Factory Branches: New York, Boston, Philadelphia, Cleveland, Detroit, Chicago. Distributors everywhere.

Heil 2500 gallon, 5 compartment elliptical truck tank mounted on a Trailmobile detachable trailer with International tractor. Note the steel tubes for carrying hose mounted below running board.

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices Oct. 31	Prices Oct. 24	Prices Oct. 17
52-54 Naphtha	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
54-56 Naphtha	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
58-60 Gasoline	8.00 – 8.25	8.00 – 8.375	8.00 – 8.375
60-62 Str.-run gasoline	8.75 – 9.00	8.75 – 9.00	8.75 – 9.00
64-66 Str.-run gasoline	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
68-70 Str.-run gas. 350-360 e.p.	10.00 –10.25	10.00 –10.25	9.75 –10.25
OKLAHOMA			
48-50 450 e.p. naphtha	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
50-52 450 e.p. naphtha	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
56-58 450 e.p. gasoline	6.00	6.00	6.00
58-60 450 e.p. gasoline	6.00	6.00	6.00
56-58 U. S. Motor, 437 e.p.	**6.00 – 6.125	**6.00 – 6.125	**6.00 – 6.125
58-60 U. S. Motor, 437 e.p.	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
60-62 437 e.p. gasoline	**6.125– 6.375	**6.25 – 6.50	**6.25 – 6.75
60-62 400 e.p. gasoline	**6.50 – 6.75	**6.50 – 6.75	**6.50 – 7.00
64-66 390 e.p. gasoline	**6.75	**6.875	**6.875– 7.00
64-66 375 e.p. gasoline	**7.00 – 7.125	**7.00 – 7.25	**7.00 – 7.25
68-70 350-360 e.p. gasoline	7.00 – 7.25	7.125– 7.375	7.50
KANSAS (F. O. B. refinery Kansas destination)			
58-60 U. S. Motor 437 e.p.	6.25 – 6.50	6.50	6.50
60-62 400 e.p. gasoline	7.00 – 7.25	7.00 – 7.125	7.00
64-66 375 e.p. gasoline	7.00	7.50	7.375– 7.50
NORTH TEXAS			
48-52 450 e.p. naphtha	†6.00	†6.00	†6.00
56-58 450 e.p. gasoline	5.875	5.875	5.875
58-60 450 e.p. gasoline	5.875	5.875– 6.125	5.875– 6.125
58-60 U. S. Motor 437 e.p.	6.00	6.00 – 6.125	6.00 – 6.125
60-62 400 e.p. gasoline	6.375	6.375	6.375
64-66 390 e.p. gasoline	6.50	6.50	6.50
64-66 375 e.p. gasoline	6.625– 6.875	6.625– 6.875	6.75 – 7.00
68-70 350-360 e.p. gasoline	7.00	7.00 – 7.25	7.00 – 7.25
NORTH LOUISIANA (For Louisiana and differential territory destination)			
58-60 U. S. Motor gasoline	6.50 – 6.625	6.50 – 6.625	6.50 – 6.625
ARKANSAS (For Arkansas intrastate shipment)			
56-58 450 e.p. gasoline	6.25	6.25	6.25
58-60 450 e.p. gasoline	6.25	6.25	6.25
58-60 U. S. Motor 437 e.p.	6.50 – 6.75	6.75	6.625– 6.75
ARKANSAS (F. O. B. Arkansas refineries for interstate shipment)			
58-60 U. S. Motor 437 e.p.	**6.375– 6.625	**6.375– 6.625	**6.375– 6.625
CALIFORNIA			
*54-58 U.S. Motor 437 e.p.	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
*58-60 U.S. Motor 437 e.p.	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
*42-45 Eng. dis. 445-480 e.p.	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00

*2c tax to be added if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375° F. Since Oct. 1, 1927 all naturals must pass corrosion test.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	†6.00	6.00	6.00 – 6.125
Grade A, 72-79.9, 90% Recovery	†6.00	6.00	6.00 – 6.125
Grade BB, 84-92, 85% Recovery	5.75	5.75	5.75
Grade B, 76-83.9, 85% Recovery	5.75	5.75	5.75
Grade C, 80-90, 78% Recovery	5.625	5.625	5.50 – 5.625
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	6.00	6.00 – 6.125	6.125– 6.25
Grade A, 72-79.9, 90% Recovery	6.00	6.00 – 6.125	6.125– 6.25
Grade BB, 84-92, 85% Recovery	5.75 – 5.875	5.75	5.75
Grade B, 76-83.9, 85% Recovery	5.75 – 5.875	5.75	5.75
Grade C, 80-90, 78% Recovery	5.625	5.625	5.625
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†6.375– 6.50	†6.375– 6.50	†6.375– 6.50
Grade BB	†6.125	†6.125	†6.00 – 6.125
Grade C	†6.125	†6.125	†6.00 – 6.125
CALIFORNIA			
75-85, 375-390 e.p. blend.	9.50 –10.00	9.50 –10.00	8.50 –10.00

MOTOR FUEL BLENDS

PENNSYLVANIA			
68-70 Blend 437 e.p.	Prices	.....	.....
64-66 Blend 437 e.p.	temporarily	.....	.....
60-62 Blend 437 e.p.	discontinued	.....	.....
OKLAHOMA			
64-66 Blend 437 e.p.	6.00 – 6.125	6.00 – 6.125	6.00 – 6.125

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene	6.625– 7.00	6.75 – 7.00	6.75 – 7.00
46 w.w. kerosene	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
47 w.w. kerosene	7.25 – 7.75	7.25 – 7.75	7.25 – 7.50
OKLAHOMA			
41-43 w.w. kerosene	4.625– 4.75	4.625– 4.75	4.625– 4.75
42-44 w.w. kerosene	5.00 – 5.25	5.00 – 5.25	4.75 – 5.00
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	4.875– 5.25	4.875– 5.25	4.875– 5.25
42-44 w.w. kerosene	5.625– 5.75	5.625– 5.75	5.625– 5.75
NORTH TEXAS			
40-42 w.w. kerosene	†4.50	†4.375– 4.50	†4.375
41-43 w.w. kerosene	†4.75	†4.625– 4.75	†4.625– 4.75
NORTH LOUISIANA (For Louisiana and differential territory destination)			
41-43 w.w. kerosene	5.00	5.00	4.75 – 4.875
ARKANSAS (For intrastate shipment only)			
42-44 kerosene	5.00	5.00	4.75 – 5.00
ARKANSAS (F. O. B. Arkansas refineries for interstate shipment)			
42-44 kerosene	4.75 – 5.00	4.75 – 5.00	4.75
CALIFORNIA			
38-40 w.w. kerosene	5.00 – 5.50	5.00 – 5.50	5.00 – 6.00

NEUTRAL OIL

Vis.	Prices Oct. 31	Prices Oct. 24	Prices Oct. 17
PENNSYLVANIA (Viscosity at 70°F.)			
200 No. 3 Assoc. Filt.	34.00 –34.50	34.00 –34.50	34.00 –34.50
180 No. 3 Assoc. Filt.	31.00 –32.00	32.00 –32.50	32.00 –32.50
150 No. 3 Assoc. Filt.	27.25 –27.75	27.00 –28.00	27.50 –28.00
(Non Viscous)			
34 Grav. 330-340 Flash	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
36 Min. Neut. 300-305 Flash	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00
****OKLAHOMA**			
Vis. Color (Viscosity at 100°F.)			
100—No. 2	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
150—No. 3	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
150—No. 4	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
180—No. 4	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
180—No. 5	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
200—No. 3	9.50 –11.00	9.50 –11.00	9.50 –11.00
200—No. 4	9.50 –10.75	9.50 –10.75	9.50 –10.75
200—No. 5	8.50 –10.50	8.50 –10.50	8.50 –10.50
220—No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3	14.00	14.00	14.00
240—No. 4	13.50	13.50	13.50
240—No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280—No. 3	16.00 –17.00	16.00 –17.00	16.00 –17.00
280—No. 4	15.25	15.25	15.25
280—No. 5	14.00 –15.00	14.00 –15.00	14.00 –15.00
300—No. 5-6	17.00	17.00	17.00
GULF COASTAL			
Vis. Color (Viscosity at 100° F., pour test 0)			
100—No. 2 Unfilt. Pale	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
200—No. 3 Unfilt. Pale	9.50 –10.00	9.50 –10.00	9.50 –10.00
300—No. 3 Unfilt. Pale	10.00 –11.00	10.00 –11.00	10.00 –11.00
500—No. 3½ Unfilt. Pale	12.00 –12.50	12.00 –12.50	12.00 –12.50
750—No. 4 Unfilt. Pale	14.50 –15.00	14.50 –15.00	14.50 –15.00
200—No. 5½ Red Oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300—No. 5½ Red Oil	9.50 –10.00	9.50 –10.00	9.50 –10.00
500—No. 6 Red Oil	10.50 –11.00	10.50 –11.00	10.50 –11.00
750—No. 6 Red Oil	13.00 –13.50	13.00 –13.50	13.00 –13.50
CALIFORNIA			
Vis. Color (Viscosity at 100°F.)			
100—No. 2	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
100—No. 3	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00
200—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
300—No. 3	10.50 –11.00	10.50 –11.00	10.50 –11.00
450—No. 3-3½	13.00 –13.50	13.00 –13.50	13.00 –13.50
550—No. 3-3½	14.50 –15.00	14.50 –15.00	14.50 –15.00
600—No. 3-3½	15.00 –15.50	15.00 –15.50	15.00 –15.50
100—No. 5	6.50	6.50	6.50
200—No. 5	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300—No. 5	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
400—No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
500—No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
600—No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
700—No. 7	14.50 –14.50	14.00 –14.50	14.00 –14.50

CYLINDER STOCKS

****OKLAHOMA**			
190-200 Vis. at 210° Brt. St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis. at 210° Brt. St.	25.00 –27.00	25.00 –27.00	25.00 –27.00
600 E St. 140-150 Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	9.00 –10.00	9.00 –10.00	9.00 –10.00
600 St. Ref. Dark Green	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA (1-inch Immersion Test)			
600 Steam Refined	10.00 –10.50	10.00 –10.50	10.00 –10.50
650 Steam Refined	12.00 –13.00	11.75 –12.50	12.00 –12.50
600 Flash	16.50 –17.50	16.50 –17.50	16.50 –17.50
625 Flash	27.00 –28.00	27.00 –28.00	27.00 –28.00
600 Warren E	18.50 –19.50	18.50 –19.50	18.50 –19.50
600 Oil City E	16.50 –17.00	16.50 –17.00	17.00
600 D Filtered	24.50 –25.50	25.50 –26.00	25.50 –26.00
Cold Test Stocks (brt. filt.)	32.50 –33.00	33.00 –33.50	33.50 –34.00
Cold Test Stock (dark filt.)	30.00 –31.00	31.00 –31.50	31.50 –32.00

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

†PRICES NOMINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

Store gasoline in crude tanks without discoloration

YOU can! If the crude tanks are first cleaned with Oakite materials and methods.

Oakite cleaning removes all sludge, oil, bituminous deposits, and dirt, completely from the interior of storage tanks. In fact, Oakite cleans so thoroughly that gasoline can be stored in crude tanks—*without loss of a color point.* What is more, Oakite cleans at lower cost than any other material available. *And Without Fire Hazard!*

Have an Oakite Service Man give you the facts. Write us. No obligation.

Oakite Service Men, cleaning specialists, are located in the leading industrial centers of the U. S. and Canada

Oakite is manufactured only by

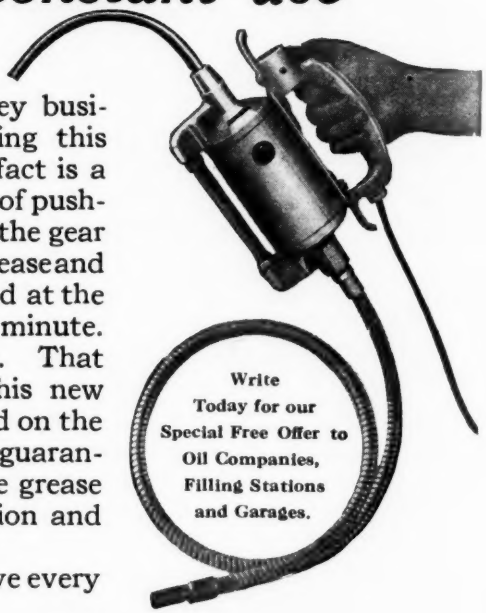
OAKITE PRODUCTS, INC.
42C Thames St., New York, N.Y.

(Formerly Oakley Chemical Co.)

OAKITE
Industrial Cleaning Materials and Methods

Warren Electric Grease Extractor

So light and handy it invites constant use



THERE is no monkey business connected with using this grease extractor. The fact is a man gets a real kick out of pushing the nozzle down into the gear case and seeing the old grease and dirt curl out the other end at the rate of two pounds per minute.

There is no work to it. That is a big reason why this new appliance is making good on the claim—yes, the written guarantee—that it will triple the grease sales of every filling station and garage that will use it.

We stand ready to prove every statement.

Write Today for our Special Free Offer to Oil Companies, Filling Stations and Garages.

The Warren Refining and Chemical Co., Cleveland, O.

REPUTATION GUARANTEE SATISFACTION

On good roads or bad roads, loaded or light, Brown tanks will remain tight. No secret reinforcements nor mysterious highsounding features. Just good honest full weight material correctly built by real tradesmen. The Brown Certified Truck Tank is the result of practical oil men's experience. From the oil man's standpoint, we offer just what you expect—efficient service—oil-tight at all times—and attractive appearance—priced right. Get our figures and compare the facts.

A 1650 gallon with stake barrel carriers and underslung cantoxes

BROWN SHEET IRON & STEEL CO. **ST. PAUL, MINN.**

Tear out this Coupon and mail it today

Make of Truck..... Size Tank Required.....

Other equipment on which you may send prices.....

Name..... Address.....

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

WAX

PENNSYLVANIA	Prices Oct. 31	Prices Oct. 24	Prices Oct. 17
Per Pound, New York			
122-124 white crude scale	3.125– 3.25	3.125– 3.25	3.25
124-126 white crude scale	3.25	3.25	3.25
OKLAHOMA			
**124-126 Semi-refined..	2.75 – 3.125	2.75 – 3.125	2.625– 3.125
CALIFORNIA			
White crude scale, per pound, ton lots.....	6.00 – 6.50	6.00 – 6.50	6.00 – 7.00

FUEL OIL

PENNSYLVANIA			
36-40 fuel oil.....	4.625– 4.75	4.50 – 4.75	4.75
30-34 fuel oil.....	4.50 – 4.625	4.50 – 4.625	4.50 – 4.625
28-32 fuel oil.....	4.50 – 4.625	4.50 – 4.625	4.50 – 4.625
OKLAHOMA			
38-40 straw distillate.....	3.25	3.25	3.25
36-38 straw distillate.....	3.00	3.00	3.00
*32-36 gas oil, straw.....	†2.625	†2.625	†2.625
*32-36 dark gas oil.....	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
28-30 fuel oil (in bbls.)...	$0.925– 0.975	$0.95 – 1.00	$0.95 – 1.00
26-28 fuel oil (in bbls.)...	$0.875– 0.90	$0.90 – 0.95	$0.90 – 0.95
24-26 fuel oil (in bbls.)...	**$0.85– 0.875	**$0.875– 0.90	**$0.875–0.90
22-26 fuel oil (in bbls.)...	**$0.85	**$0.85	**$0.85
18-22 fuel oil (in bbls.)...	**$0.75	**$0.75– 0.80	**$0.75– 0.80
16-18 fuel oil (in bbls.)...	**$0.725– 0.75	**$0.75	**$0.75
14-16 fuel oil (in bbls.)...	**$0.725– 0.75	**$0.75	**$0.75

*Zero cold test low flash goods sell for ⅛ to ¼ cent more per gallon.

KANSAS (F. O. B. refinery Kansas destination.)			
38-40 straw distillate.....	3.50 – 3.75	3.75	3.50 – 3.75
36-38 straw distillate.....	3.25	3.25 – 3.50	3.25 – 3.50
32-36 gas oil.....	2.75 – 2.875	2.75 – 3.00	2.75 – 2.875
24-26 fuel oil	*$0.85– 0.90	*$0.95– 1.05	*$0.95 – 1.05
18-22 fuel oil.....	*$0.95	*$0.85– 0.90	*$0.85 – 0.90
NORTH TEXAS			
38-40 straw distillate.....	3.125	3.125	3.125– 3.25
32-36 gas oil, cracked....	2.50	2.50	2.625
32-36 gas oil, uncracked..	2.50 – 2.625	2.50 – 2.625	2.625
24-26 fuel oil (in bbls.)...	$0.85– 0.875	$0.85 – 0.875	$0.85 – 0.90

GULF COASTAL	Prices Oct. 31	Prices Oct. 24	Prices Oct. 17
Fuel (in bbls.).....	$1.60 –$1.65	$1.60 –$1.65	$1.60 –$1.65
Gas oil.....	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50
NORTH LOUISIANA (For Louisiana and differential territory destination)			
32-36 gas oil, dark.....	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil, straw.....	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
16-20 fuel oil (in bbls.)...	$1.05 – 1.10	$1.05 – 1.10	$1.075– 1.125
ARKANSAS (For Arkansas intrastate shipment only)			
32-36 gas oil.....	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
28-32 gas oil.....	2.875– 3.00	2.875– 3.00	3.00
Road oil.....	$1.25 – 1.30	$1.25 – 1.30	$1.25 – 1.30
ARKANSAS (F. O. B. Arkansas refineries for interstate shipment)			
28-32 gas oil.....	2.75 – 2.875	2.75 – 2.875	2.75 – 3.00
Smackover crude fuel....	$1.10 – 1.15	$1.10 – 1.15	$1.10 – 1.15
Road oil.....	$1.15 – 1.25	$1.15 – 1.25	$1.15 – 1.25
CALIFORNIA (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (in bbls.)...	$0.65 –$0.90	$0.65 –$0.90	$0.65 –$0.90
14-18 Bunker oil (in bbls.)	$0.85 –$1.00	$0.85 –$1.00	$0.85 –$1.00
30-34 gas oil (in bbls.)...	$0.90 –$1.00	$0.90 –$1.00	$0.90 –$1.00
27 Plus Diesel oil (in bbls.)	$0.85 –$1.00	$0.85 –$1.00	$0.85 –$1.00

PETROLATUMS

PENNSYLVANIA (In cents per pound in tank cars; in barrels, in car lots ¾c per pound more.)			
Snow White.....	9.25	9.25	9.25
Lily White.....	8.25	8.25	8.25
Cream White.....	7.25	7.25	7.25
Light Amber.....	5.50	5.50	5.50
Amber.....	4.50	4.50	4.50
Red.....	3.75	3.75	3.75
Green No. 5 color.....	3.50	3.50	3.50

**PETROLEUM COKE

(Per ton in car lots)

Lump.....	$5	$5	$5
Still run.....	$3	$3	$3
Breeze.....	$2	$2	$2

†PRICES NOMINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

Oil-Electric Locomotive May Spur Fuel Demand

WASHINGTON, Oct. 31.—Treading on the heels of over-production comes the oil-electric locomotive, with promise of a consumption of fuel oil outrunning any present use. It is only two years ago that the oil-electric began attracting any attention. Now there are six locomotive manufacturers building and experimenting with users of the heavy products.

Official figures just compiled by the bureau of mines show that last year 11 oil-electric locomotives were put into service. At the end of April, this year, the total of such locomotives in use was sixteen. All the oil-electrics are small. Twelve of them are 60-ton machines of 300 horse-power. Three are of 100-ton 600 horse-power. Thirteen of them are in switching service in New York, Philadelphia, Chicago and St. Paul. One is used in a copper mining operation in Utah and one in a lumbering operation in California.

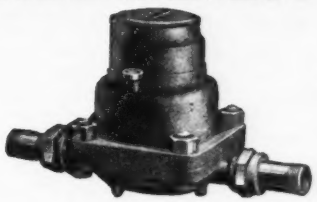
At the time the official figures to which reference is made were gathered one engine manufacturer was building a 1,000 horse-power oil-electric 6-cylinder, 4-cycle engine. The engine, of course, is a Diesel engine using heavy oil and an electricity generating and storage plant, on the same chassis. Another manufacturer is working on a 12-cylinder 4-cycle engine rated at 960 horse-power at 325 revolutions per minute. Three other companies are working on 6-cylinder, 4-cycle engines rated at 750 horse-power at 500 revolutions.

Fuel economy is the watchword with railroad executives. The oil-electric is economical in a fuel sense because it uses no fuel unless it is actually pulling a load. The coal and oil burning steam engines must use fuel to keep up a head of steam big enough to bring them into use on a second's notice.

Association's Name Changed

TULSA, Oct. 31.—The Association of Natural Gasoline Manufacturers has changed its name to the "Natural Gasoline Association of America." Announcement of the change was made this week by A. V. Bourque, secretary. When the association was organized in 1921 the membership suggested the present name for the organization but the idea was abandoned because of its similarity to the Natural Gas Association. Now that the gas association has merged with the American Gas Association that objection has been removed.

RELIABILITY COMES FIRST



Year after year, users of Niagara Oil or Gasoline Meters depend on them for reliable measurement of petroleum products in any quantity. Their accuracy is constant---the meters are simple and trouble proof---installation is easy. Write us for catalog.

NIAGARA OIL METERS

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Warm October Sunshine Creates Better Gasoline Demand

Staff Special
CHICAGO, October 29

NEARLY all quarters reported better demand for 58-60 U. S. Motor gasoline this week than last week. Temperatures over S. O. Indiana territory continued abnormally high, and weather stimulated motoring. October temperatures were higher than in any October in the history of the Chicago weather bureau recorded.

Selling price of 58-60 U. S. Motor gasoline was about the same as last week with most sales at 6 to 6.125 cents. A few sales were reported under 6 cents. Some sellers continued to quote U. S. Motor gasoline at 6.25 cents.

While several sellers reported fairly good demand for light gasolines early in the week, most sellers reported little business was being done on these grades near the end of the week. Prices in general were somewhat lower today. The 60-62, 437 e.p. gasoline was sold mostly at 6.25 to 6.375 cents, with some goods moving at 6.125 cents. The 60-62, 400 e.p. gasoline opened Monday at 6.625 to 6.75 cents but fell to 6.50 to 6.75 cents Saturday. The 64-66, 375 e.p. gasoline was at 7 to 7.25 cents Monday and Tuesday. It fell to 7 to 7.125 cents Wednesday and sold at this range the rest of the week. One seller reported he was moving some 64-66, 375 e.p. gasoline at 6.875 cents to meet competition.

Kerosene demand was quiet with prices off slightly during the closing days. The 41-43 w.w. kerosene sold at 4.625 to 4.75 cents nearly all week with sales at 4.50 cents becoming a market factor Saturday.

Demand for distillate continued at about the same rate as last week. Price of 38-40 straw was firm at 3.25 to 3.375 cents. Some material moved at 3.125 cents.

Fairly steady demand for gas oil was reported at generally unchanged prices. The ordinary dark gas oil of 32-36 gravity sold mostly at 2.625 cents with some sales reported at 2.50 cents. Dark gas oil with a zero cold test moved at 2.625 to 2.75 cents, with the majority of material going at 2.75 cents. The 32-36 straw zero gas oil was comparatively scarce. Prices continued unchanged at 3 to 3.125 cents.

Demand for fuel oil was about the same as last week and prices were generally unchanged. Industrial companies were buying small amounts of fuel oil but nearly all quarters reported less demand than at the same time last month. The 28-30 fuel oil was at $1.00 to $1.05 throughout the week. The 24-26 moved mostly at $0.85 to $0.875 and the 22-26 at $0.85 flat. The 18-22 continued to sell at $0.80 to $0.825. Some 18-22 moved as low as $0.75, but this oil had a high cold test and a high sulfur content. Smackover crude fuel quotations remained at $1.025 to $1.075.

Occasional showers are forecast for next week in S. O. Indiana territory. Temperatures will be above normal early in the week, but colder weather towards the end.

Coryell to Operate in 4 States

LINCOLN, Oct. 28.—L. L. Coryell & Son of Lincoln, Neb., recently purchased the Redfield Oil Co., of Topeka, Kan. This gives the Coryell organization outlet in four states, Iowa, Missouri, Nebraska and Kansas. In Nebraska the company operates in much the same manner as other Independent jobbers, but in the states of Standard Oil Co. of Indiana territory the Coryells have a policy of ignoring the Q.D.A. price schedule, selling at the same price to all customers, the price being lower than those posted by Standard.

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Week's Price Changes Tank Wagon Markets

Gasoline Changes

Standard of Indiana—T. w. and s. s. prices gasoline reduced 1.5 cents, Grand Rapids, to 14 cents and 16 cents respectively, including a cent state tax, **Sept. 29.**

T. w. and s. s. prices gasoline reduced 2 cents, Fargo, to 15 cents and 17 cents, including 2 cent state tax, **Oct. 22.**

Standard of Louisiana—T. w. and s. s. prices gasoline advanced 2 cents, New Orleans, both to 15.5 cents, including 2 cent state tax and 1 cent parish tax, **Oct. 26.**

Standard of Kentucky—T. w. and s. s. prices gasoline advanced 1 cent, Savannah, to 17 cents and 19 cents respectively, including 4 cent state tax, **Oct. 24.**

T. w. and s. s. prices advanced 1 cent, Tampa, to 18 cents and 21 cents respectively, including 5 cent tax, **Oct. 17.**

Magnolia Petroleum—T. w. and s. s. prices gasoline advanced 2 cents, Fort Smith, to 16 cents and 19 cents respectively, including 3 cent Texas tax, **Oct. 28.**

Kerosene Changes

Standard of Kentucky—Kerosene reduced 1 cent, Pensacola, to 14 cents, **Oct. 26.**

Maine's Gasoline Tax Remains at 3 Cents

CLEVELAND, Oct. 28.—The gasoline tax in Maine remains at 3 cents a gallon. A proposed 4-cent tax measure failed to receive enough signatures to go on the referendum ballot at the Maine election Oct. 19. Until the gasoline tax division of the state is notified there will be no change to a 4-cent tax, according to the state auditor's office.

There is said to be some legal peculiarity about the 4-cent bill passed by the Maine legislature and its status, in view of a proposed referendum on it. Even state officials cannot explain its status.

WASHINGTON, Oct. 31.—The navy department is asking for bids for motor gasoline and domestic aviation gasoline to cover its requirements for the first half of 1928. Bids are to be opened at the bureau of supplies and accounts on Nov. 16. The estimated needs are for 2,866,700 gallons of Grade C motor gasoline and 1,217,000 gallons of Grade B domestic aviation gasoline. Bids are to be submitted on schedule 7910. Bidders are expected to show the units price of gasoline sellers propose to furnish and the amount of the tax thereon, separately. The contracts will provide for taking care of increases or decreases in the tax.

Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

(OIL PRICE HANDBOOK has t.w. and s.s. markets for whole year arranged for quick reference)

These Prices In Effect October 31, 1927

S.O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	16	2	18	20	14
Newark, N. J.	16	2	18	20	14
Annapolis, Md.	16	4	20	23	12
Baltimore, Md.	16	4	20	23	10
Cumberland, Md.	16	4	20	23	14
Washington, D. C.	16	2	18	21	12
Danville, Va.	16	4½	20.5	*	14
Norfolk, Va.	16	4½	20.5	23.5	12
Richmond, Va.	14	4½	18.5	21.5	14
Roanoke, Va.	16	4½	20.5	23.5	14
Petersburg, Va.	16	4½	20.5	23.5	14
Charleston, W. Va.	16	4	20	23	14
Keyser, W. Va.	16	4	20	*	14
Parkersburg, W. Va.	13	4	17	20	14
Wheeling, W. Va.	16	4	20	23	14
Charlotte, N. C.	16	4	20	23	14
Hickory, N. C.	16	4	20	23	14
Mt. Airy, N. C.	16	4	20	23	14
Salisbury, N. C.	16	4	20	23	14
Charleston, S. C.	15	5	20	23	14
Columbia, S. C.	15	5	20	23	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

*New York City	17	0	17	21	15
Albany, N. Y.	17	0	17	19	15
Buffalo, N. Y.	15	0	15	18	14
†Rochester, N. Y.	13	0	13	16	13
Syracuse, N. Y.	17	0	17	19	15
Boston, Mass.	17	0	17	18	15
Augusta, Me.	17	3	20	22	15
Manchester, N. H.	17	3	20	22	15
Burlington, Vt.	17	3	20	22	15

*In steel barrels.
†It is reported that S. O. New York is selling a second grade of gasoline at Rochester, 4c below the above posted prices which apply on its Socony grade.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	*22	14
Philadelphia, Pa.	15	*	15	*21	14
Allentown, Pa.	16	*	16	*22	14
Erie, Pa.	12	*	12	*18	14
Scranton, Pa.	16	*	16	*22	14
Altoona, Pa.	16	*	16	*22	14
Dover, Del.	16	3	19	22	14
Wilmington, Del.	16	3	19	22	14
Providence, R. I.	17	2	19	19	15
Boston, Mass.	17	0	17	17	15
Springfield, Mass.	17	0	17	17	15
Worcester, Mass.	17	0	17	17	15
Hartford, Conn.	19	2	21	22	15
New Haven, Conn.	19	2	21	21	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Lexington, Ky.	13	5	18	21	15.5
Louisville, Ky.	14	5	19	22	15
Covington, Ky.	14	5	19	22	15.5
Clarksdale, Miss.	13	4	17	20	12.5
Gulfport, Miss.	††14.5	4	††18.5	21.5	14
Jackson, Miss.	13	4	17	20	13.5
Natchez, Miss.	12.5	4	16.5	19.5	14
Vicksburg, Miss.	12.5	4	16.5	19.5	14
Birmingham, Ala.‡	14	4	18	21	15.5
Mobile, Ala.‡	13	4	17	20	15
Montgomery, Ala.*‡	15	4	19	22	16.5
Atlanta, Ga.	12	4	16	18	†15.5
Augusta, Ga.	15	4	19	22	†16.5
Macon, Ga.	15	4	19	22	†16.5
Savannah, Ga.	13	4	17	19	14.5
Jacksonville, Fla.°	13	5	18	21	14
Miami, Fla.°	15	5	20	23	15.5
Tampa, Fla.°	13	5	18	21	14
Pensacola, Fla.°	**14	5	**19	22	14

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.
‡Alabama gasoline prices include 1/40 of 1c inspection fee, effective Oct. 1, 1927.
†Georgia kerosene prices include 1c state tax.
°Florida gasoline prices include ⅛c inspection fee.
**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.
††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Chicago, Ill.	14	2	16	18	12
Decatur, Ill.	8.5	2	10.5	12.5	12.1
E. St. Louis, Ill.	13.1	2	15.1	17.35	11.2
Joliet, Ill.	14.4	2	16.4	18.4	12.3
Peoria, Ill.	10	2	12	12	12.1
Quincy, Ill.	14.2	2	16.2	18.2	11.9
Indianapolis, Ind.	11.2	3	14.2	15.2	13.2
Evansville, Ind.	14	3	17	19	13
South Bend, Ind.	12	3	15	15	13.4
Detroit, Mich.	12.8	3	15.8	17.8	13.7
Grand Rapids, Mich.	11	3	14	16	13.6
Saginaw, Mich.	14.9	3	17.9	19.9	13.8
Green Bay, Wis.	14.6	2	16.6	18.6	12.4
Madison, Wis.	14.3	2	16.3	18.3	12 1
Milwaukee, Wis.	14.1	2	16.1	18.1	11.9
La Crosse, Wis.	15.2	2	17.2	19.2	13
Minneapolis, Minn.	12	2	14	14	12 9
Duluth, Minn.	13.5	2	15.5	17.5	12.9
Mankato, Minn.	15.1	2	17.1	19 1	12 7
Des Moines, Ia.	14	3	17	19	12 3
Davenport, Ia.	12.5	3	15 5	17.5	12.3
Sioux City, Ia.	14.1	3	17.1	19.1	11.9
Mason City, Ia.	14.5	3	17.5	19.5	12.3
St. Louis, Mo.	*13.6	2	15.6	17.9	11.3
Kansas City, Mo.	†12.9	2	14.9	16.9	10.6
St. Joseph, Mo.	†12.5	2	14.5	16.5	11.2
Fargo, N. D.	13	2	15	17	14.9
Grand Forks, N. D.	17.2	2	19.2	21 2	15.2
Minot, N. D.	16.9	2	18.9	20.9	14.9
Pierre, S. D.	15.5	4	19.5	21.5	13.9
Huron, S. D.	12.5	4	16.5	18.5	13.9
Wichita, Kans.	12.8	2	14.8	16.8	10.8
Bartlesville, Okla.	12.8	3	15.8	17.8	10.8

S. O. Indiana Q. D. A. schedule on tank wagon deliveries of gasoline, effective March 3 thru territory, except Wisconsin effective March 4: 50 gals. and over on delivery, 1c discount, except in city of Chicago where 1c discount applies on 100 gals. and over; 6,000 gals. and over per month, 1½c; 10,000 gals. and over per month, 2c; 15,000 gals. and over per month 3c, except latter discount does not apply in Chicago.
Service station discounts: 200 gals. or more per month, and 2400 gals. or more per year, 2c per gal.
March 1, 1c discount on kerosene in 50 gal. dumps thru territory.
*Includes city tax of ½c.
†Includes city tax of 1c.

S. O. NEBRASKA

Omaha, Neb.	14.25	2	16.25	16.25	12.25
McCook	12.75	2	14.75	16.75	11.50
Norfolk	14.75	2	16.75	18.75	12.75
North Platte	15.75	2	17.75	19.75	13.50
Scottsbluff	15.25	2	17.25	19.25	13.00

CONTINENTAL OIL

Denver, Colo.	13	3	16	16	12.5
Pueblo, Colo.	12	3	15	15	14.5
Grand Junction, Colo.	17.5	3	20.5	22.5	18
Casper, Wyo.	14	3	17	19	13
Cheyenne, Wyo.	15	3	18	20	14.5
Butte, Mont.	19	3	22	22	19
Helena, Mont.	19.5	3	22.5	24.5	19
Salt Lake City, Utah	17.5	3½	21	23	17
Boise, Ida.	19.5	4	23.5	25.5	19
Twin Falls, Ida.	19.5	4	23.5	25.5	19
Albuquerque, N. M.	16	5	21	24	17

S. O. CALIFORNIA*

Phoenix, Ariz.	19	4	23	27	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

*On Oct. 1, t.w. price at all points for spot sales, was advanced 1c. Very large portion of deliveries are under contract carrying above prices. New customers signing contracts and selling only one brand of gasoline, are given prices published in above table.

S. O. LOUISIANA

Little Rock, Ark.	11	5	16	16	12
Alexandria, La.	13	2	15	18	†14
Baton Rouge, La.	12	2	14	17	†12.5
Lake Charles, La.	13.5	2	15.5	18.5	†14
New Orleans, La.	13.5	2	*15.5	*15.5	14
Shreveport, La.	13.5	2	15.5	18.5	†13
Lafayette, La.	13	2	15	18	†13.5
Bristol, Tenn.	16	3	19	22	14
Chattanooga, Tenn.	16.5	3	19.5	22.5	15
Knoxville, Tenn.	16.5	3	19.5	22.5	15
Nashville, Tenn.	15	3	18	21	15
Memphis, Tenn.	13.5	3	16.5	16.5	14

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.
†Kerosene price in Louisiana includes 1c state tax.

S. O. OHIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
All Ohio points	14	3	17	19	14

MAGNOLIA PETROLEUM

Muskogee, Okla.	12	3	15	18	9
Oklahoma City	10	3	13	14	9
Tulsa, Okla.	11	3	14	15	9
Fort Smith, Ark.*	13	*3	16	19	12
Little Rock, Ark.	11	5	16	16	12
Texarkana, Ark. *	12	*3	15	18	12
Dallas, Tex.	11	3	14	17	11
Fort Worth, Tex.	11	3	14	16	10
Houston, Tex.	10	3	13	15	15
San Antonio, Tex.	10	3	13	15	10
El Paso, Tex.	11	3	14	15	16

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M. & P. Naphtha	Cleaner Naphtha
Chicago	16	18	18
Detroit	17.7	19.7	19.7
Kansas City	16.2	†18.2	†18.2
Milwaukee	16.7	*20.7	*20.7
Minneapolis	*20	*22	*22
St. Louis	15.9	17.9	17.9
New York	...	19	....

*Includes 2c state tax.
†Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Toronto	19.5	3	22.5	26	21
Ottawa	19.5	3	22.5	26	21
Cochrane	24.5	3	27.5	36	26
Ft. William	24.5	3	27.5	31	23.5

MANITOBA

Winnipeg	24.5	3	27.5	31	23.5

SASKATCHEWAN

Regina	27.5	0	27.5	32	26.5

ALBERTA

Edmonton	26.5	3	29.5	33	25.5
Calgary	22.5	3	25.5	29	23.5

BRITISH COLUMBIA

Vancouver	21	3	24	28	22

QUEBEC

Montreal	20.5	3	23.5	27	21
Quebec City	22.5	3	25.5	31	23
Three Rivers	22.5	3	25.5	30	23

NEW BRUNSWICK

St. John	24.5	3	27.5	32	24
Moncton	24.5	3	27.5	32	24

NOVA SCOTIA

Halifax	24.5	3	27.5	32	24
Sydney	24.5	3	27.5	32	24

PRINCE EDWARD ISLAND

Charlottetown	24.5	3	27.5	31	24

Note: In districts surrounding these points 1c additional is added to city price.

Seaboard Gasoline Prices Sag Though Jobbing Demand Rises

Staff Special
NEW YORK, Oct. 29

RECESSIONS in gasoline prices at virtually all points along the eastern seaboard stood out prominently this week. Trading was exceptionally light. Weather along most of the Atlantic coast was better this week than last week and the New York trade reported an increase in jobbing demand late in the week.

October weather has been kind to the oil industry. Not only is this true in the east, but reports indicate that favorable motoring weather has prevailed in most of the country.

Eastern refiners apparently were more concerned with the gasoline situation throughout the country this week than with New York conditions. A bit of bullish sentiment got under way in some quarters. Well informed students of the market predict gasoline stocks at refineries throughout the country were reduced in October more than the industry expected. This would make stocks the lowest since 1923.

One refiner pointed out that during the intervening four years the country's production of crude oil has increased 100 per cent and viewers of the market have not lost sight of this fact in taking the optimistic stand they took this week.

The fact that approximately one-third of the gasoline in storage in the country is in the hands of California refiners is looked upon as most pertinent as it affects gasoline markets in the east. It is felt in some quarters that the dumping of California gasoline in the east is the one big thing that could press eastern markets to lower levels and this hardly seems likely in view of the firm position California refiners are maintaining.

Reports as to what California gasoline can be bought for currently disagree. One refiner this week asserted he was unable to better 6.125 cents, f.o.b. California refinery, whereas others stated they had every reason to believe that 5.875 cents could be done on firm bid. However, goods f.o.b. California even at this lower price could not disturb local markets to any great extent.

The fact that they have been able to move gasoline further west in Ohio than for some time past indicated to several of the eastern trade that Mid-Continent markets also were tightening slightly. With Mid-Continent refiners withdrawing from part of the Ohio market, competition for Ohio business has not been nearly so keen.

U. S. Motor gasoline in tank cars at New York harbor was largely quoted at 8 cents this week. Rumors were current about the shading of this price by one or two refiners, but a check-up failed to reveal any significant volume of tank car business moved under this figure. This price was bettered in bargeload lots, one sale this week being reported at 8 cents laid down in New England which figures back 7.50 cents, Bayonne.

At other points along the seaboard, from Jacksonville to Boston, prices were off approximately 0.25 cent, at least from the tops of market ranges. One refiner quoted 7.50 cents for U. S. Motor gasoline over November, f. o. b. Savannah terminal.

There was no notable improvement in demand for kerosene but several refiners advanced their quotations for water white goods 0.5 cent to 7.50 cents at all coast terminals. Business, however, continued to be taken by several sellers at 7 cents a gallon.

The gas oil market at New York showed little if any change. The 28-34 gravity gas oil was available at 4.75 cents in tank cars and the price was 0.25 cent less for barge loads.

Oct. 25, Standard Oil Co. of New Jersey cut bunker oil 10 cents a barrel to $1.45 at New York and other leading refiners met the reduction. Prices at other coastal terminals were down.

Lower Prices Stimulate Export Interest but Buying is Light

Staff Special
NEW YORK, Oct. 29

LOWER prices for light oils stimulated considerable interest among foreign buyers in Gulf markets this week. Inquiries were more numerous and indications were that some active buying might develop from abroad in the near future.

The only business closed this week that became known, was an inter-company transaction involving 40,000 barrels of 64-66, 375 end point gasoline, 12,000 barrels of U. S. Motor, and 8,000 barrels of water white and prime white kerosene. This cargo was taken at 8.1875 cents, 7 cents, 7 cents, and 6 cents, respectively. These prices were about all that foreign buyers could go by.

A French buyer inquiring for 40,000 barrels of U. S. Motor gasoline and a small quantity of 64-66, 375 end point gasoline was reported to have obtained his requirements at 7 cents and 8.25 cents, but confirmation of the deal was lacking today. A part cargo of U. S. motor and 60-62, 400 end point gasoline was rumored to have been closed with an English buyer at 7 cents and 7.50 cents, respectively, but confirmation of this deal also was lacking.

Only a few sellers were bidding for the little business that was available. Most refiners asserted that the aforementioned prices were far below what they could afford to take and consequently expressed no desire to commit themselves at these figures.

The fact that a leading refiner has taken a "not anxious to sell" position is looked upon by some exporters as a fair indication of the possible trend of the market in the next 90 days. Toward the end of the week, a leading broker received an inquiry for approximately 40,000 barrels of U. S. Motor and 7,000 barrels of 64-66, 375 end point gasoline from an English buyer for December-January lifting at the Gulf. Virtually every refinery quoting on the business quoted 7.25 cents and 8.50 cents; none apparently was willing to commit himself for forward delivery at current market levels.

There were no open market inquiries for either part or full cargoes of kerosene. Basing their ideas on the inter-company transaction mentioned, several exporters felt the kerosene market was easier at 7 cents for water white and 6 cents for prime white and said foreign buyers would have these prices in mind when again entering the market for this commodity. Others were of the opinion that this business could not be taken as representative of open market prices and felt that it would be hard to better 7.25 cents and 6.25 cents, respectively.

Other commodities in the Gulf market fluctuated little in price this week. Gas oil was reported more freely available but no business to speak of was closed.

VARIED reports were heard as to prices for Grade C bunker oil in cargoes. Spot cargo sales were lacking but this oil was offered at $1.15 a barrel at New Orleans and Port Arthur and buyers said indications toward the end of the week were that this price could be bettered. Bunkering prices were down approximately 5 cents a barrel. Grade C in bunker was available at New Orleans at $1.25, and $1.30 was quoted further west on

Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926)

Eastern Domestic Markets

(Prices in bulk except where otherwise noted, f. o. b. refinery or seaboard plant, represent majority of quotations and sales)

	Oct. 31	Oct. 24
U. S. Motor gasoline, tank cars, New York Harbor	8.00	8.00 – 8.25
U. S. Motor gasoline, tank cars, Philadelphia	8.00	8.00 – 8.25
U. S. Motor gasoline, tank cars, *Boston	8.00 – 8.25	8.00 – 8.25
U. S. Motor gasoline tank cars, *Providence	8.00 – 8.25	8.00 – 8.25
U. S. Motor gasoline, tank cars, Baltimore	8.00	8.00 – 8.25
U. S. Motor gasoline tank cars, Norfolk	8.00	8.00 – 8.25
U. S. Motor gasoline tank cars, Charleston	7.75	7.75 – 8.00
U. S. Motor gasoline tank cars, Savannah	7.50 – 7.75	7.75
U. S. Motor gasoline tank cars, Jacksonville	7.50	7.50 – 7.75
California U. S. Motor gasoline, tank cars, Baltimore	8.00 – 8.25	8.00 – 8.50
California U. S. Motor gasoline, tank cars, Philadelphia	8.00	8.00 – 8.25
Water white kerosene, New York	7.00 – 7.50	6.75 – 7.00
Water white kerosene, Philadelphia	7.00 – 7.50	6.75 – 7.00
Water white kerosene, Baltimore	7.00 – 7.50	....
Water white kerosene, *Boston	7.00 – 7.50	7.00
28-34 gas oil, New York	4.75	4.75
28-34 gas oil, *Boston	4.875– 5.00	5.00
38-42 furnace oil, New York	6.00	6.00
36-40 Furnace Oil, *Boston	6.00 – 6.25	6.00 – 6.25
Grade C bunker oil, New York	$1.45	$1.55
Grade C bunker oil, *Boston	$1.50 –$1.55	$1.60
Diesel oil, New York	$2.10	$2.10
Russian 885-890 s.g., 325-330 vis. medicinal	$0.75 –$0.85	$0.75 –$0.85
Russian 870-875 s.g., 150-155 vis. medicinal	$0.67 –$0.77	$0.67 –$0.77
Russian 860-865 s.g., 80-85 vis. medicinal	$0.65 –$0.75	$0.65 –$0.75

*F.O.B. New England refineries and seaboard terminals.

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are all Penna. products, prices per gal. in bbls.)

	Oct. 31	Oct. 24
U. S. Motor gasoline	23.90	24.40
43-45, 150 w.w. kerosene	18.15	18.15
42-44, 110 s.w. kerosene	17.15	17.15
CYLINDER OILS		
Bright stock, dark	38.00 –39.00	38.00 –39.00
Filtered D 600	31.00	31.00
Filtered E 600 Warren	25.00	25.00
Unfiltered 600 s.r.	17.50 –18.00	17.00 –18.00
Unfiltered 650 s.r.	18.50 –19.50	18.50 –19.50
600 Flash s.r.	20.00	20.00 –21.00
630 Flash s.r.	31.00 –33.00	31.00 –33.00
RED ENGINE OILS (Vis. 100°)		
300 vis. No. 6½ color	20.00	20.00
250 vis. No. 6 color	19.00	19.00
200 vis. No. 6 color	18.50	18.50
PALE ENGINE OILS (Vis. 100°)		
230 vis. No. 4¾ color	24.00	24.00
180 vis. No. 3¼ color	20.00	20.00
100 vis. No. 2¼ color	15.75	15.75
MOTOR OILS (Vis. 100°)		
600 vis. No. 7 color	35.00	35.00
500 vis. No. 6½ color	33.00	33.00
400 vis. No. 7¼ color	31.00	31.00
300 vis. No. 6 color	30.00	30.00
200 vis. No. 3¼ color	24.00	24.00
MEDICINAL OILS		
875-885 s.g.	$0.80	$0.80
865-870 s.g.	$0.70	$0.70

WAXES (In cents per pound, f.a.s. carload lots)

WHITE CRUDE SCALE (In barrels)	Oct. 31	Oct. 24
122-124 A.m.p.	3.00	3.00 – 3.125
124-126 A.m.p.	3.00	3.00 – 3.125
FULLY REFINED (In burlap bags)		
123-125 A.m.p. Philadelphia	4.00 – 4.125	4.00 – 4.125
125-127 A.m.p.	4.00 – 4.125	4.00 – 4.125
128-130 A.m.p.	4.125– 4.25	4.125– 4.25
130-132 A.m.p.	4.50	4.50
133-135 A.m.p.	*5.50	*5.50
135-137 A.m.p.	*5.75 – 6.00	*5.75– 6.00
YELLOW CRUDE SCALE		
124-126 A.m.p.	2.75	2.75 – 2.875

* Prices Nominal

Gulf Export Market

(F.o.b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over, except where otherwise noted.)

GASOLINE	Oct. 31	Oct. 24
U. S. Motor	7.00	7.00 – 7.25
61-63, 390 e.p.	8.00	7.875– 8.00
64-66, 375 e.p.	8.25	8.25
U. S. Motor, cases (cargo lots)	$1.60	$1.60 –$1.65
64-66, cases (cargo lots)	$1.75	$1.75 –$1.80
KEROSENE		
44 water white	7.00	7.00 – 7.25
41-43 prime white	6.00	6.00 – 6.25
Water white, cases (cargo lots)	$1.60	$1.60 –$1.65
Prime white, cases (cargo lots)	$1.50	$1.50 –$1.55
DOMESTIC GAS AND BUNKER OILS		
*26-28 gas oil	4.25	4.25 – 4.375
*30-32 gas oil	4.50	4.50
Grade C bunker oil	$1.25 –$1.30	$1.30 –$1.35
Grade C bunker oil, cargoes	$1.15 –$1.20	$1.18 –$1.20

*Translucent thru neck of 4 oz. bottle.

MEXICAN CRUDE AND BUNKER OILS (F.o.b. steamer, Tampico)		
Heavy Panuco crude taxes to be paid	$1.10 –$1.12	$1.10
Grade C bunker oil, for bunkering purposes, taxes paid	$1.35	$1.35

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F; cold test 0 (Tanker, f.o.b. Houston)

100 vis. No. 2 unfiltered pale	6.00 – 6.50	6.00 – 6.50
200 vis. No. 3 unfiltered pale	8.00 – 9.00	8.00 – 9.00
300 vis. No. 3 unfiltered pale	9.00 –10.00	9.00 –10.00
500 vis. No. 3½ unfiltered pale	11.00 –11.50	11.00 –11.50
200 vis. No. 5½ red oil	7.00 – 7.50	7.00 – 7.50
300 vis. No. 5½ red oil	8.00 – 8.50	8.00 – 8.50
500 vis. No. 6 red oil	10.00	10.00

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Oct. 31	Oct. 24
Gasoline, U. S. Motor, 53-55 Gravity	6.00 – 6.50	6.00 – 6.50
Gasoline, U. S. Motor, blends and special cuts	7.00 – 8.00	7.00 – 8.00
Gas Oil, 30-34, per bbl.	$0.90 –$1.00	$0.90 –$1.00
Diesel Oil, 27 plus, per bbl.	$0.80 –$1.00	$0.80 –$1.00
Bunker Oil, 14-18, per bbl.	$0.85 –$1.00	$0.85 –$1.00
Fuel Oil, 14-18, per bbl.	$0.80 –$1.00	$0.80 –$1.00
Kerosene, 38-40 w.w., 125-150 flash, in gals.	4.50 – 5.00	4.50 – 5.00
Cased Goods		
Gasoline, U. S. Motor	$1.70 –$1.80	$1.70 –$1.80
Kerosene, 38-40, w.w., 125-150 flash	$1.35 –$1.50	$1.35 –$1.50

the Gulf, although this price could be shaded, it was said.

The New Orleans wax market was down 0.125 to 0.25 cent. Only a few sales of white crude scale were reported at 2.75 to 2.875 cents.

Russia Gets Portable Plants

LOS ANGELES, Oct. 28.—The Southwestern Engineering Corp. recently shipped to Russia four portable absorption plants to be used in the Baku oil fields. Two of the plants were the regular Southwestern portables, while the other two were assembled to special order, all units being placed on one base. This method of assembling is never used in this country, as the boiler is placed some 300 feet away from the other units.

S O. New Jersey Reduced Cased Kerosene Price

NEW YORK, Oct. 29.—Standard Oil Co. of New Jersey reduced price of case gasoline 0.5 cent a gallon to 23.90 cents a gallon Oct. 25. The last previous change was a 0.5-cent reduction June 15.

Demand for wax from abroad was practically at a standstill. White crude scale at New York was quoted at 3 cents a pound. Resale agents reported they were able to buy small lots 0.125 cent under this price. Yellow crude scale was available at 2.75 cents a pound.

Fully refined waxes held fairly steady, due largely to scarcity rather than to improvement in foreign buying. The available supply of the 133-135 and 135-137 A.m.p. grades was said to be limited.

With the possible exception of 600 steam refined, lubricating oil prices did not vary. The 600 s.r. was fairly active at 17.50 to 18 cents a gallon, New York.

Correction

It was stated in Oct. 19 issue of NATIONAL PETROLEUM NEWS, page 82, that L. L. Brundred was connected with the National Supply Co., Los Angeles. Mr. Brundred had prepared a paper on the gas lift that was read at the Fort Worth meeting. Mr. Brundred resigned his position with National Supply Company Sept. 1 and has opened an office in the Petroleum Securities bldg., Los Angeles, as a consulting petroleum engineer. He is a member of the petroleum division of the A. I. M. M. E.

Crude Oil Prices, as Posted by Major

(Crude prices for years 1924-1925-1926 in

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$2.65
Bradford District Oil in National Transit Lines (Bradford District)	2.65
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	2.55
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	2.55
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	2.50
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.25
Keister Grade in National Transit Lines (Butler Co.)	1.10
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.40
Corning Grade in Buckeye Pipe Lines (Ohio)	1.45
Corning, O. heavy grade	1.35
*Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.50
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

*Somerset oil run prior to Oct. 1922, takes price of 6 cents lower than above quotations.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines.....$1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective March 14, 1927

Wooster	$1.57	Plymouth	$1.33
Lima	1.71	West. Kentucky	1.33
Waterloo	1.35	*Canadian Petro.	2.11
Indiana	1.48	*Oil Springs	2.18
Princeton	1.60	*Posted by Imperial Oil Ltd.	
Illinois	1.60		

OKLAHOMA, KANSAS And NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective March 12, 1927

28-28.9	$1.12	35-35.9	$1.26
29-29.9	1.14	36-36.9	1.28
30-30.9	1.16	37-37.9	1.30
31-31.9	1.18	38-38.9	1.32
32-32.9	1.20	39-39.9	1.34
33-33.9	1.22	40-40.9	1.36
34-34.9	1.24	41-41.9	1.38
42-42.9	$1.40	48-48.9	$1.52
43-43.9	1.42	49-49.9	1.54
44-44.9	1.44	50-50.9	1.56
45-45.9	1.46	51-51.9	1.58
46-46.9	1.48	52 and above	1.60
47-47.9	1.50		

Above schedule met on March 12, by Gulf, Mid-Continent Pet. Corp., and Empire; by Carter, Humble and the Texas Co. on March 14.

Humble Oil & Refining Co. Prices
(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

March 14, same schedule as Prairie in above fields.

Mirando, Tex.....$1.00

Magnolia Petroleum Co.
(In Oklahoma, Kansas and North and East Central Texas)

Effective Sept. 14, Magnolia posted same price schedule as Prairie in above fields except that Magnolia is paying $1.05 for all oil below 30 gravity.

Corsicana heavy.....$1.00

Carter Oil Co.
(Oklahoma and Kansas)

March 14, same schedule as Prairie.

PANHANDLE, TEXAS
Humble Oil & Refining Co.

Effective Aug. 23

Hutchinson, Carson and Wheeler Counties..$0.75
Pampa, Gray County, Effective March 14:

28-28.9	$ .80	37-37.9	$ .98
29-29.9	.82	38-38.9	1.00
30-30.9	.84	39-39.9	1.02
31-31.9	.86	40-40.9	1.04
32-32.9	.88	41-41.9	1.06
33-33.9	.90	42-42.9	1.08
34-34.9	.92	43-43.9	1.10
35-35.9	.94	44 and above	1.12
36-36.9	.96		

WEST TEXAS
Humble Oil & Refining Co.

Effective Aug. 23

Crane, Upton, Crockett and Pecos Counties...$0.60

NORTH LOUISIANA — ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton and De Soto

Effective March 14, 1927

Below 28	$1.10	40-40.9	$1.36
28-28.9	1.12	41-41.9	1.38
29-29.9	1.14	42-42.9	1.40
30-30.9	1.16	43-43.9	1.42
31-31.9	1.18	44-44.9	1.44
32-32.9	1.20	45-45.9	1.46
33-33.9	1.22	46-46.9	1.48
34-34.9	1.24	47-47.9	1.50
35-35.9	1.26	48-48.9	1.52
36-36.9	1.28	49-49.9	1.54
37-37.9	1.30	50-50.9	1.56
38-38.9	1.32	51-51.9	1.58
39-39.9	1.34	52 and above	1.60

*Smackover, below 24	$0.90
* do 24 and above	1.15
Bellevue	1.25
Cotton Valley	1.00
**Urania, La	.90
†East El Dorado	1.00

**Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

*Smackover prices posted on Sept. 20 by S. O. La., Magnolia, Shreveport-El Dorado Pipe Line and Atlantic Oil Producing Co.; on Sept. 23 by The Texas Co. on Sept. 17, La. Oil Refg. Corp.

STEPHENS, ARKANSAS

Atlantic Oil Producing Co. and Louisiana Oil Refining Corp.

Below 28	$1.00	30-30.9	$1.06
28-28.9	1.02	31-31.9	1.08
29-29.9	1.04	32 and above	1.10

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

California Fuel Prices Hold Up In Face of East Coast Cut

LOS ANGELES, Oct. 28.—It was feared early this week that the reduction in bunker oil prices at New York might cause lower prices here, but if the lower price on East Coast has had any effect here it has not shown up in quotations.

The low quotations on fuel to be shipped to the East Coast in almost every instance is 85 cents or better. But in some instances quotations of 80 cents have been made on export lots for points other than the East Coast. Several large companies are fairly well fixed for fuel outlets the next few months.

The smaller refiners are having very little trouble to move their fuel in tank car lots in their territory at 65 cents up. But these plants have no deepwater terminals and can take no export business.

The gasoline market is without change. Export prices are still around 6 cents and up, with tanker rates unsteady. Several boats are available at around 55 cents for the voyage to the East Coast. It is also possible to buy one or two tankers now in the market at reasonable prices. Shipments are holding up fairly well and there are reports of some spot gasoline to move in the next 60 days at around 6 cents.

Tank cars of gasoline for shipment out of the state at 7 cents up, while gasoline for points within the state holds around 8 cents, without tax. Some of the refiners are asking more.

* * *

Los Angeles Shipments

LOS ANGELES, Oct. 28.—Movement of petroleum products out of Los Angeles harbor week ended Oct. 22 to points outside Pacific coast trade territory totaled 1,546,199 barrels, or a daily average of 220,885 barrels. This compares with daily average of 174,117 barrels previous week and 264,182 barrels week ended Oct. 8.

The movement last week was composed of 84,753 barrels of crude, 1,023,056 barrels of fuel, 231,374 barrels of gasoline, 170,402 barrels of kerosene and 36,614 barrels of diesel. Pacific foreign drew 443,961 barrels of fuel and all of the kerosene. Atlantic domestic drew 84,753 barrels of crude, 247,832 barrels of fuel and 156,218 barrels of gasoline. The remainder went to Atlantic foreign.

Twenty-one tankers departed last week against 18 the previous week.

McGonigle Joins Shaffer

CHICAGO, Oct. 28.—E. J. McGonigle, formerly sales representative of Cosden & Co., in Michigan and Wisconsin, recently became identified with Shaffer Oil & Refining Co. He will make Chicago his headquarters and travel for the company in Michigan, Wisconsin and northern Illinois.

Purchasers, in All Fields (in Effect October 31)

OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

(Effective March 14)

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co. and Midwest Refining Co.

(Salt Creek prices effective March 12)

‡Salt Creek	29-29.9	$1.14
" "	30-30.9	1.16
" "	31-31.9	1.18
" "	32-32.9	1.20
" "	33-33.9	1.22
" "	34-34.9	1.24
" "	35-35.9	1.26
" "	36-36.9	1.28
" "	37 and above	1.30
Elk Basin		1.33
Grass Creek light		1.33
Big Muddy		$1.25
Lance Creek		1.33
Rock Creek		1.25
Mule Creek		1.30
Rex Lake		1.10
‡Osage		1.33
‡Cat Creek, Mont.		1.33
Sunburst, Mont.		1.35
‡Hogback, N. Mex.		1.38
Artesia, N. Mex.		1.00

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Huntington Beach	Inglewood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Ollinda-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Montebello	Coyote Hills	Santa Fe Springs	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
16-16.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
17-17.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
18-18.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
19-19.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
20-20.9	.85	.85	.85	....	.85	....	.85	.85	....	.77	.77	.76	.76	.85	.85
21-21.9	.86	.86	.85	....	.86	....	.85	.86	....	.79	.79	.77	.77	.85	.85
22-22.9	.87	.87	.85	....	.87	....	.85	.87	....	.81	.81	.78	.78	.85	.85
23-23.9	.88	.88	....	....	.88	....	.85	.88	....	.83	.83	.79	.79	.85	.85
24-24.9	.89	.89	....	....	.89	$ .89	.85	.89	.85	$ .85	.85	.80	.80	.85	.85
25-25.9	.90	.90	....	....	.90	.90	.86	.90	.85	.87	.87	.81	.81	.86	.86
26-26.9	.92	.92	....	....	.92	.92	.87	.91	.85	.89	.89	.83	.82	.87	.87
27-27.9	.94	.94	....	....	.94	.94	.88	.92	.85	.91	.91	.85	.83	.88	.88
28-28.9	.96	.96	....	....	.96	.96	.89	.93	.86	.93	.93	.87	....	.89	.89
29-29.9	.98	....	....	....	.98	.98	.90	.94	.87	.96	.96	.89	....	.91	.91
30-30.9	1.00	....	....	....	1.00	1.00	.91	.95	.88	.99	.99	.91	....	.93	.93
31-31.9	1.03	....	....	....	....	1.03	....	....	.89	1.02	1.02	.93	....	....	.95
32-32.9	1.06	....	....	....	....	1.06	....	....	.91	1.05	1.05	.95	....	....	.97
33-33.9	....	....	....	....	....	1.09	....	....	.93	1.08	1.08	.97	....	....	.99
34-34.9	....	....	....	....	....	1.12	....	....	.95	....	1.11	.99	....	....	1.01
35-35.9	....	....	....	....	....	1.15	....	....	.97	....	....	1.01	....	....	1.03
36-36.9	....	....	....	....	....	1.18	....	....	.99	....	....	....	....	....	1.06
37-37.9	....	....	....	....	....	1.21	....	....	1.01	....	....	....	....	....	1.09
38-38.9	....	....	....	....	....	1.24	....	....	1.03	....	....	....	....	....	1.12
39-39.9	....	....	....	....	....	1.27	....	....	1.06	....	....	....	....	....	1.15
40-40.9	....	....	....	....	....	1.30	....	....	1.09	....	....	....	....	....	....
41-41.9	....	....	....	....	....	1.33	....	....	1.12	....	....	....	....	....	....
42-42.9	....	....	....	....	....	1.36	....	....	1.15	....	....	....	....	....	....

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

Texas Oil Men Meet in Fort Worth, Nov. 11

HOUSTON, Oct. 27.—The Texas division of the Mid-Continent Oil & Gas Association will hold its ninth annual meeting in Fort Worth, Friday, Nov. 11, according to announcement of J. P. Laney, secretary, of Dallas. The organization, representing about 95 per cent of the petroleum industry in Texas, is composed of individuals from every branch.

After a morning business session in the Longhorn room at the Texas hotel, the afternoon will be in charge of the "wildcats," a social adjunct of the association. Beginning at 1:30 o'clock, the convention will be entertained at the River Crest Country club with a golf tournament and other features. Two trophies—the Marland cup and the Hamilton cup—and other prizes will be offered in the golf tournament.

Competition for the trophies will be especially keen. The Marland cup offered by the Marland Oil Co. will be played for by teams from the Wildcat committees in the various cities. Teams from Houston, Dallas, Wichita Falls and Fort Worth have already entered for this cup. The Hamilton cup, offered by W. B. Hamilton of Wichita Falls, to be played for at the annual meeting of the association each year until some one person has won it for three consecutive years, was offered for the first time at the meeting at Dallas last year and has been in the custody of Frank Cullinan of Dallas, who turned in the lowest score on that occasion. J. Elmer Thomas of Fort Worth offers a cup for the player in the tournament who makes a hole in one.

In the evening, at 7 o'clock, an informal banquet will be held at the River Crest Country club, at this time winners in the golf tournament will be announced and short talks will be made by outstanding men on pertinent subjects.

The hospitality of Fort Worth oilmen is a byword within the industry from coast to coast and the Wildcats' slogan—"Thru fellowship, broaden our acquaintances and make new friends," will be a fitting one on this occasion.

Invitations are being sent out by the association to the oil industry over the state and oil men and those with affiliated interests will be welcome regardless of membership and whether an invitation is received or not.

Officers of the Texas Division are president, J. D. Collett, Fort Worth; vice-presidents R. S. Haseltine, Dallas, J. C. Wilson, Beaumont, W. B. Pyron, Houston, W. P. Gage, Dallas, Adrain Moore, Houston, Roy B. Jones, Wichita Falls, W. B. Hamilton, Wichita Falls; treasurer W. M. Massie, Fort Worth; secretary J. P. Laney, Dallas.

LOS ANGELES, Oct. 28.—Pres. E. W. Clark, of the American Petroleum Institute, also executive vice-president of the Union Oil Co., has returned to Los Angeles, after about two months visit at New York and other eastern points. Mr. Clark attended the gas conservation committee meeting at Ponca City. Vice-president L. P. St. Clair, of the Union, who attended the meeting at Ponca City, arrived home with Mr. Clark.

OIL STOCKS AND FINANCES

National Petroleum News

More Profits Earned by Few Companies; Others Still Suffer Losses

Staff Special
CLEVELAND, Oct. 31

EARNINGS statements of 13 oil companies for the third quarter of 1927 show varying fortunes. A few companies' statements reveal a slight improvement over the earlier quarters' profits but other companies are still showing the results of overproduction.

Three companies of 12 for which comparative figures are available, report larger net in the third quarter of 1927 than in the third quarter of 1926. These three are Barnsdall Corp., Independent Oil & Gas Co., and Pierce Petroleum Co.

For the first nine months of 1927 only two of 12 companies report larger profits than in the first nine months of 1926. These companies are the Independent Oil & Gas Co. which had an increase of about 6 per cent in net profits, and the Pierce Petroleum Co. which was able to swing from the red into the black this year.

Operations of the American Republics Corp., whose subsidiaries manufacture supplies and equipment for the oil industry while others are engaged in crude oil production, were at a loss in the third quarter. The corporation in the nine months failed to earn dividends on the preferred stock.

E. B. Reeser, president of Barnsdall, wrote stockholders that the company's subsidiaries received an average of $1.39 a barrel for its crude this year while last year the average price was $2.19 a barrel. A storage policy was decided on by the directors, he said, and 2,900,000 barrels of crude were held Sept. 30 in expectation of higher prices.

Although Barnsdall's profits were considerably less this year than last, it more than earned its year's dividend requirements in nine months. However, cash dividend payments were suspended in the third quarter in favor of a payment in stock.

Profits of California Petroleum Corp. for both the third quarter and the first nine months were less than a third this year of what they were last year. Net profits this year were 1 cent a share under dividend requirements. The company has increased its stock of crude and refined oils 1,033,855 barrels to 7,366,071 barrels.

Although an absolute comparison of Houston Oil Co. earnings cannot be made because figures are not available, the reports for both the third quarter and nine months indicate that the company's business this year is more profitable than last year's business. The net after all charges in the nine months this year averaged $6.18 per $100 share of common stock or at the annual rate of 8.24 per cent.

The higher earning power of Houston Oil this year probably accounts for much of the rise in price of its stock on the New York Exchange but not all. The stock almost tripled in market value, rising from 60⅛ to 175. The fall in market value in the last week when Houston Oil led the decline on the New York market, indicates there must have been some speculative support which was withdrawn. A non-dividend paying stock earning at the rate of 8¼ per cent a year can hardly hold to a price of $175 for $100 stock, although Houston's earning rate seems to indicate dividends may not be so far distant now.

Independent Oil & Gas Co. earned its 1927 dividend three and a half times in the first three quarters. Independent has benefited from Seminole production.

Marland Oil Co. lost $1,040,311 on its third quarter business. In the second quarter its loss amounted to $2,155,500. In nine months it lost $2,967,119 compared with a profit of $13,719,970 in the first nine months of 1926.

Sept. 30 Marland had on hand $18,245,565 in cash, placing it in position to buy crude for storing at the present low market. Its crude inventory that date was $11,009,430 compared with $10,806,194 Dec. 31, last. Its crude is carried at cost.

Comparative Condensed Earnings Statements for Nine Months of 1927 and 1926

Company	Year	Gross Operating Income	Expenses, Costs etc.	Net Operating Income	Total Income	Deprec., Deplet. Other Res.	Net Profits	Net to Common a Share	Quarterly Dividend on Common
American Republics Corp.	1927	$19,889,646	$19,136,034	$753,612	$753,612	.....	‡877,932	.....	.....
do	1926	22,391,254	20,165,523	2,225,731	2,225,731	.....	‡2,108,488	7.91	.....
Barnsdall Corp.	1927	.....	.....	7,184,868	7,184,868	$3,836,376	3,348,492	$2.92	$0.62½
do	1926	.....	.....	7,339,583	7,339,583	2,572,182	4,767,401	4.19	.50
California Petroleum Corp.	1927	.....	.....	9,853,733	9,853,733	8,327,040	1,526,693	.74	.25
do	1926	24,575,360	12,026,938	12,548,422	12,548,422	7,134,488	5,413,934	2.84	.50
Houston Oil Co.	1927	7,636,063	3,431,334	4,204,729	4,399,252	2,453,464	1,945,788	6.18	....
do	1926	.....	.....	.....	.....	.....	‡2,210,154	.....	.....
Independent Oil & Gas Co.	1927	.....	.....	.....	.....	.....	1,843,934	3.68	.25
do	1926	.....	.....	.....	.....	.....	1,744,885	3.49	.25
Marland Oil Co.	1927	45,604,323	36,394,356	9,209,967	11,353,767	14,320,886	*2,967,119	0	....
do	1926	55,530,862	43,831,980	11,698,882	19,277,384	5,557,614	13,719,970	6.74	....
Mid-Continent Petroleum Corp.	1927	.....	.....	8,991,455	8,991,455	1,548,098	††7,443,357	....	....
do	1926	.....	.....	12,137,773	12,137,773	1,117,772	††11,020,001	....	1.00
Phillips Petroleum Co.	1927	.....	.....	.....	.....	.....	††15,643,159	....	.75
do	1926	.....	.....	.....	.....	.....	††24,800,000	....	.75
Pierce Petroleum Co.	1927	6,519,504	5,609,494	910,010	910,010	757,706	152,304	.06	....
do	1926	6,112,142	5,449,974	662,268	662,268	678,112	*15,844	0	....
Richfield Oil Co.	1927	.....	.....	5,582,590	5,582,590	2,052,977	3,529,613	....	.25
Texas Pacific Coal & Oil Co.	1927	6,363,878	4,644,235	1,719,643	1,984,223	120,670	††1,863,553	....	.15
do	1926	6,407,536	3,797,983	2,609,553	3,155,548	181,809	††2,973,739	....	....
Tidal Osage Oil Co.	1927	.....	.....	.....	.....	.....	†2,751,471	4.35	....
do	1926	.....	.....	.....	.....	.....	†695,908	....	....
White Eagle Oil & Refining Co.	1927	12,911,446	11,112,568	1,798,878	1,798,878	104,732	††1,694,146	....	.50
do	1926	14,832,992	12,269,364	2,563,628	2,563,628	50,540	††2,513,088	....	.50

*Loss †Before Federal Income Taxes ‡Before Depreciation and Depletion.

Transactions in Oil Shares on New York Stock Exchange

1926 High	1926 Low	1927 High	1927 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Oct. 29 Sales	First	High	Low	Last	Change
32⅞	24¼	37⅝	27⅝	(sh) 916,675	N.P.	Amerada Corp.	50cQ	July 30, 27	8,500	29¼	30½	29	29	— 1
74	39⅞	64⅛	35⅛	(sh) 209,180	N.P.	American Republics	.....	.....	3,300	45	45⅜	39	40⅜	— 4⅝
59½	44¾	50¼	40	$ 56,000,000	$25	Associated Oil	50cQ	Sept. 24, 27	.....	.....	.....	.....	.....	.....
128⅜	97	131⅝	107	50,000,000	100	Atlantic Refining	$1Q	Sept. 15, 27	16,700	115½	118⅜	114	114¼	— ¾
120	115½	118½	111⅛	20,000,000	100	do pfd.	$1.75Q	Aug. 1, 27	200	117¼	†117¼	†111½	116½	— ¼
33½	23¼	35½	20¾	25,000,000	25	Barnsdall Corp. A	62½cQ	July 15, 27	32,900	21½	23¼	21½	22½	+ ¾
29½	22½	32½	20½	3,842,400	25	do B	62½cQ	July 15, 27	300	21½	22	21½	22	+ 1
68⅛	29¾	32⅛	20	51,523,950	25	California Petroleum	25cQ	Sept. 1, 27	7,900	21¼	21¼	21¼	21⅜	— ¼
94¼	50	96¾	65	24,355,000	100	General Asphalt	.....	.....	189,700	78	87¾	78	82⅞	+ 5½
140⅜	94⅞	144⅞	107¼	6,874,200	100	do pfd.	$1.25Q	Sept. 1, 27	4,700	129	132	129	130½	+10½
72	50¼	175¾	60½	25,000,000	100	Houston Oil	.....	.....	207,900	142	152½	133	134¼	— 9
84	19⅝	32¾	17⅝	(sh) 500,000	N.P.	Independent Oil & Gas	25cQ	Oct. 31, 27	36,200	22¼	24½	22⅝	22⅝	+ ⅛
13¾	7¼	12⅛	7½	$ 3,280,340	$10	Indian Refining	.....	Dec. 15, 20	27,300	9⅞	11	8	8	— 2
12½	8	12	7¼	4,550,110	10	do ctfs	.....	.....	5,500	9¼	9¾	7⅝	7⅝	— 1⅜
104	90	112	99	2,296,400	100	do pfd.	.....	Dec. 15, 21	300	106½	106½	102	102	+ 1
24½	19⅜	34¾	20½	(sh) 3,992,067	N.P.	Lago Oil & Transport	75cQ	Aug. 1, 27	11,600	32½	33½	31¾	31½	— 1
19¾	12	18⅜	10	(sh) 1,131,290	N.P.	Louisiana Oil Refining	.....	.....	9,400	10⅝	10⅞	†10	10	— ⅜
98	93	97	86	$ 4,000,000	$100	do pfd.	$1⅜Q	Aug. 15, 27	430	89½	89½	†86	86	— 4
28⅞	16⅛	22¾	12	(sh) 330,000	N.P.	Maracaibo Oil	.....	.....	1,100	13	13¼	12¾	12¾	— ¼
63⅜	49¼	58½	31	(sh) 2,316,401	N.P.	Marland Oil Co.	.....	Mar. 31, 27	56,400	34¾	35⅞	33⅜	33½	— ⅜
250	225	250	200	$ 45,942,800	$100	Mexican Petroleum	$3Q	Oct. 20, 27	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd.	$2Q	Oct. 20, 27	.....	.....	.....	.....	.....	.....
13¾	6	9¼	3	(sh) 945,839	N.P.	Mexican Seaboard	.....	Nov. 15, 24	1,500	4¼	4⅜	4	4⅛	— ⅛
37	27½	39⅝	25½	(sh) 1,357,800	N.P.	Mid-Continent Petroleum	.....	Aug. 1, 27	13,900	27⅛	28¼	26¼	26½	— ¼
104¼	90	105	97	$ 6,718,000	$100	do pfd.	$1.75Q	Sept. 1, 27	100	103¾	103¾	103¾	103¾	— ¼
2½	¾	3¾	1⅝	24,435,000	10	Middle States	.....	July 1, 23	2,100	2	2½	2	2⅛	+ ⅛
1⅜	½	2¾	1⅛	5,356,660	...	do ctfs	.....	.....	900	1¾	1¾	1⅝	1⅝	— ⅛
2¼	1	1⅝	1	(sh) 3,500,000	N.P.	Pacific Oil	.....	.....	4,800	1⅝	1⅝	1¼	1¼	— ⅛
76½	56½	65⅞	45½	$ 48,807,500	$ 50	Pan American P. & T.	$1Q	Oct. 20, 27	5,800	46⅜	48	46¼	46¼	— ¼
78⅜	56⅞	66⅜	45⅝	121,094,850	50	do B	$1Q	Oct. 20, 27	12,500	48	48⅞	47	47	— ⅛
46	30	37⅞	16¾	(sh) 400,000	N.P.	Pan American Western B.	.....	Jan. 30, 27	4,400	18½	19¼	18¼	19	+ ⅞
62	4½	18⅜	8	(sh) 198,770	N.P.	Panhandle P. & R.	.....	.....	1,700	10¾	11	10	10	— ¾
99¾	51	83¾	58¾	$ 2,935,200	$100	do pfd.	.....	July 2, 23	.....	.....	.....	.....	.....	.....
57⅛	40	60¼	36½	(sh) 2,406,796	N.P.	Phillips Petroleum	75cQ	Oct. 1, 27	146,000	41⅞	43½	40¼	40¾	— ⅝
1⅜	½	1⅜	½	$ 29,622,925	$ 25	Pierce Oil Corp.	.....	.....	5,900	⅝	⅝	½	½	0
27⅛	11½	24	13½	15,000,000	100	do pfd.	.....	Feb. 1, 22	.....	.....	.....	.....	.....	.....
7	2¼	5½	2½	(sh) 2,500,000	N.P.	Pierce Petroleum	.....	.....	2,500	3¼	3½	3¼	3½	+ ⅜
20¾	11	33⅞	16¾	$ 37,450,850	$50	Producers & Refiners	.....	Sept. 15, 23	11,200	26¼	28½	25½	26	— ⅛
41¾	30¾	50	36⅞	2,845,350	50	do pfd.	.....	May 1, 25	240	41¼	42	41	41¼	0
31	25¼	33⅛	25	75,939,250	25	Pure Oil Co.	‡37½cQ	Sept. 1, 27	26,500	25⅝	26½	25	25	— ½
112¾	106	114	111⅜	13,000,000	100	do 8% pfd.	$2Q	Oct. 1, 27	300	114	114	113	113	— 1
57⅛	47⅜	58	45⅛	(sh) 616,605	13.40	Royal Dutch, N. Y. shares	$1.80	Aug. 2, 27	1,500	46	46⅛	†45⅛	45⅛	— ⅞
40⅝	40½	47⅞	41⅜	(sh) 78,389	F2	Shell Transport & T.	$1.45	July 22, 27	200	41⅝	41⅝	41⅞	41⅝	— ⅜
31	24	31¾	24⅝	(sh) 10,000,000	N.P.	Shell Union Oil	35cQ	Sept. 30, 27	7,700	25⅛	25⅞	25⅛	25¼	+ ⅛
114	103	111	107½	$ 18,350,400	$100	do pfd.	$1½Q	Aug. 15, 27	.....	.....	.....	.....	.....	.....
28⅝	15⅛	22¾	14¼	7,208,080	10	Simms Petroleum	.....	Apr. 1, 27	12,700	17	18⅛	17	17¼	+ ¼
24⅞	16¾	22⅜	15	(sh) 4,501,339	N.P.	Sinclair Consolidated	.....	May 31, 24	18,600	15⅞	16¾	†15	15¼	— ⅝
99½	90	103¼	97	$ 16,907,000	$100	do pfd.	$2Q	Aug. 15, 27	.....	.....	.....	.....	.....	.....
37⅛	26⅝	37⅜	24⅛	27,396,590	25	Skelly Oil Co.	50cQ	Sept. 15, 27	12,100	26½	27⅛	26	26	— ½
63⅜	52⅝	60¾	50⅜	(sh) 13,016,434	N.P.	S. O. California	62½cQ	Sept. 15, 27	11,600	54⅞	55½	54⅛	54⅜	— ½
46⅜	37⅜	43¾	35⅛	$ 606,243,050	$25	S. O. New Jersey	‡25cQ	Sept. 15, 27	45,600	38⅞	40	38¾	38¾	— ¼
33¼	32½	34½	29¾	424,348,275	25	S. O. New York	40cQ	Sept. 15, 27	18,800	30⅞	31¼	30⅝	31	+ ¼
41⅝	30⅛	34⅞	30	(sh) 1,171,508	N.P.	Sun Oil	25cQ	Sept. 15, 27	2,400	30½	31	30¾	30¾	+ ¼
.....	.....	100¼	99	$ 5,000,000	$100	do pfd.	$1.50Q	Sept. 1, 27	.....	.....	.....	.....	.....	.....
5¼	1	6½	3½	(sh) 1,121,368	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	1,500	3¾	3¾	3½	3½	— ¼
57⅛	53⅛	58	45	$ 180,428,225	25	The Texas Corp.	75cQ	Oct. 1, 27	28,800	50½	51¼	50	50	— ½
19½	12	18⅞	12	8,380,340	10	Texas Pacific Coal & Oil	15c	Sept. 30, 27	7,000	13⅛	14⅜	13⅛	13⅜	— ⅛
39¼	37	29¼	19	(sh) 2,168,264	N.P.	Tide Water Oil Co.	20cQ	Sept. 30, 27	900	21¾	22½	21¾	22½	+ ¾
103	87¼	90⅛	86½	$ 20,705,200	$100	do 5% pfd.	$1.25Q	Aug. 15, 27	1,900	86¾	89¼	86¾	86⅞	+ ¾
....	....	19¼	15⅜	(sh) 4,795,934	N.P.	Tide Water Associated	.....	Aug. 1, 27	27,600	16¼	17¼	16	16⅝	+ ⅝
.....	.....	90¾	85	$ 72,795,900	$100	do pfd.	$1.50Q	Oct. 1, 27	1,300	86⅛	86½	86	86¼	+ 1¼
5½	3	9¾	3¾	(sh) 3,742,029	N.P.	Transcontinental Oil	.....	.....	37,500	7⅝	8	7½	7⅝	+ ⅛
58⅛	37¼	56¼	39⅝	$ 40,759,475	$ 25	Union Oil of California	50cQ	Aug. 10, 72	6,000	44¼	45⅜	43⅛	43¾	— ¾
120⅜	84¼	116½	94	30,734,000	100	Union Tank Car Co.	$1.25Q	Sept. 1, 27	1,300	108½	110	107	107	— 3½
....	....	28½	24½	(sh) 240,000	N.P.	Warner Quinlan	50cQ	Oct. 1, 27	100	24⅝	24⅝	24⅜	24⅝	— ⅜
29¾	25⅛	27½	21½	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Oct. 20, 27	1,800	21¾	22	†21½	21½	— ¼

*New High †New Low xEx-Dividend ‡Also extras Total Sales 1,107,570

Oil Dividends

	Amount	Stock of Record	Payable
Beacon Oil pfd. q.	$1.87½	Nov. 15	Nov. 1
Cities Service m.	½%	Dec. 1	Nov. 15
do stock	½%	Dec. 1	Nov. 15
do pfd. m.	½%	Dec. 1	Nov. 15
do pref. Bm.	½%	Dec. 1	Nov. 15
Gen. Asphalt pfd. q.	$1.25	Dec. 1	Nov. 15
Louisiana O. R. pfd. q.	$1.62½	Nov. 15	Nov. 1
National Refg. q.	37½c	Nov. 15	Nov. 1
Sinclair Cons. pfd. q.	$2	Nov. 15	Nov. 1
Skelly Oil	50c	Dec. 5	Nov. 15
Sun Oil pfd. q.	1½%	Dec. 1	Nov. 10
Westland Oil	$2	Oct. 25	Oct. 17
California Pet. q.	25c	Dec. 1	Nov. 15
Pure Oil q.	37½c	Dec. 1	Nov. 10

Cleveland Stock Market

October 28

	Par Value	Bid	Asked	Last Sale
Canfield Oil Co.	100	...	...	...
do pfd.	100	100	...	100
Fred G. Clark	10	...	3	2
National Refining Co.	25	34	..	34
do pfd.	100	130¼	...	130
Paragon Refining Co.	25	8¾	8⅞	9
do pfd.	100	94	95	93

x Ex-Dividend

PITTSBURGH STOCK EXCHANGE

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Sales	Week Ended Oct. 28 First	High	Low	Last	Ch'ge
8½	5¾	9⅛	6⅞	$ 10	Arkansas Nat. Gas.	10,660	8⅞	9¼	8¾	9	0
90½	79¾	98⅜	84	100	Columbia Gas.	14	89⅞	89⅞	89⅞	89⅞	0
101⅜	95	107	100	100	do pfd.	.....	.....	.....	.....	.....	.....
17	12½	15	9½	10	Devonian Oil	.....	.....	.....	.....	.....	.....
.....	.....	11⅜	.....	.....	Dixie Gas & Util.	500	11⅜	*11⅜	11⅜	11⅜	+ ⅛
116½	112	116¾	115	100	Duquesne Lt. 7% pfd.	.....	.....	.....	.....	.....	.....
10	5⅛	12¼	6	N.P.	Houston Gulf Gas.	.....	.....	.....	.....	.....	.....
46	39	55¾	37¼	$ 25	Lone Star Gas.	26,679	51¾	*55¾	51	54½	+ 2¾
47⅜	33⅛	22¾	22¼	25	Ohio Fuel Corp.	.....	.....	.....	.....	.....	.....
47½	42	21⅝	21	....	do ctfs.	.....	.....	.....	.....	.....	.....
6¾	5	6	5	....	Ohio Oil & Gas.	.....	.....	.....	.....	.....	.....
34	21	21	21	25	Oklahoma Nat. Gas	.....	.....	.....	.....	.....	.....
21	19¼	23¾	20¼	....	do ctfs.	368	22½	22½	21¾	22	— ¾
5⅜	3¼	3⅞	3	5	Pittsburgh Oil & Gas	575	3¼	3¼	3¼	3¼	0
10	7½	8	5½	10	Salt Creek Cons.	551	5½	6⅛	†5½	6⅛	0
27	8	26½	17	10	Tidal Osage	.....	.....	.....	.....	.....	.....
45	40	43	33	N.P.	Waverly Oil Wks. "A"	100	33½	33½	33½	33½	+ 1½

PITTSBURGH CURB EXCHANGE

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Sales	Week Ended Oct. 28 First	High	Low	Last	Ch'ge
3⅜	2½	3½	2¾	$ 5	Columbia Synd.	.....	.....	.....	.....	.....	.....
20	.06	.18	.18	5	Duquesne Oil	.....	.....	.....	.....	.....	.....
91½	85	95	88	25	Gulf Oil Corp.	200	95	*95	95	95	+ 4⅜
79	79	105	93	100	Houston Gulf Gas pfd	.....	.....	.....	.....	.....	.....
12	7½	10¾	6¼	N.P.	Leonard Oil & Dev.	6,112	7½	7½	7½	7½	— 1¾
30¼	29	32	31¼	$ 25	Oklahoma Gas.	.....	.....	.....	.....	.....	.....
2	.15	2.70	.60	10	Omar Oil & Gas.	1,600	.60	.65	†.60	.65	— .35
...	1¾	2¼	1¾	....	Pittsburgh Oil Dev.	.....	.....	.....	.....	.....	.....
2	1¾	2¼	2¼	5	do pfd.	.....	.....	.....	.....	.....	.....
33½	20	31	19	10	Plymouth Oil	400	19½	20¼	19½	20¼	+ 1
7	3	6	5	5	States Oil	.....	.....	.....	.....	.....	.....
3½	2	3⅛	1½	1	Texon Oil & Land.	100	2	2	2	2	+ ⅛
25¾	8	23¾	18	10	Tidal Osage (non-vtg).	.....	.....	.....	.....	.....	.....

*New high †New Low xEx-Dividend

Standard Oil Stock Traded in New York

1926 High	1926 Low	1927 High	1927 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Oct. 29 Sales	First	High	Low	Last	Change
21	16¾	21¾	17⅝	£ 4,000,000	£1	Anglo-American Oil	60 11/12c	May 31, 27	1,200	18½	18¾	18½	18¾	0
20¼	16½	20½	17⅝	.....	£1	do ctfs. non-voting	.....	.....	200	18⅜	18⅜	18⅜	18⅜	— ⅛
2¼	.75	1⅜	.75	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	400	1	1	1	1	0
5	2⅞	4½	2½	$ 000,000	$ 10	do pfd	.....	.....	300	4	4	3½	3½	— ½
75	65	69	50	1,000,000	25	Borne Scrymser	‡$1S.A.	Oct. 15, 27	.....	.....	.....	.....	.....	.....
59½	42	59	45	10,000,000	50	Buckeye Pipe Line	$1Q	Sept. 15, 27	350	55½	56½	55½	56½	0
82½	65	126	76½	3,000,000	25	Chesebrough Mfg.	$1Q	Sept. 30, 27	1,200	122½	*126	119¼	119¼	— 1
25⅞	17½	22⅝	16¼	38,805,260	10	Continental Oil	25cQ	Sept. 15, 27	29,000	18½	18⅞	17½	18	— ⅝
137	102	137	89	3,000,000	100	Cumberland Pipe Line	$2Q	Sept. 15, 27	100	93	93	92½	92½	— ½
63¾	43	61	47	5,000,000	100	Eureka Pipe Line	$1Q	Nov. 1, 27	100	59	59	58½	58½	— ½
32½	9¼	13½	7⅛	16,000,000	100	Galena Signal Oil	.....	June 30, 25	.....	.....	.....	.....	.....	.....
94½	35	59¾	31	4,000,000	100	do new pfd	.....	June 30, 26	20	34	34	†31	31	— 2
97½	40	60½	36	2,000,000	100	do old pfd	.....	June 30, 26	10	46	46	46	46	+ 1
99⅝	52	65¼	54	73,117,577	25	Humble Oil & Refining	‡30cQ	Oct. 1, 27	39,100	61⅜	65	61⅜	61¾	— 1⅛
144½	125¼	171½	123¾	20,000,000	100	Illinois Pipe Line	$6S.A.	June 15, 27	2,950	165	*171½	164	169½	+ 4½
39¾	32½	64¾	37¾	(sh) 6,491,952	N.P.	Imperial of Canada	‡25cQ	Sept. 1, 27	6,900	58¾	60¼	58	59	+ ½
70	54¼	79	61	$ 5,000,000	$50	Indiana Pipe Line	$1Q	Aug. 15, 27	1,600	74	78½	74	77½	+ 4½
35¼	28¾	34⅞	28	(sh) 7,118,138	N.P.	International Petroleum	25c	June 15, 27	20,200	31	31⅞	30¾	31⅞	+ ⅝
20¾	12½	20¼	13½	$ 6,362,500	$12½	National Transit Co	25cQ	Sept. 15, 27	18,400	18	*20¼	18	18½	0
51½	27¼	37	31¼	5,000,000	100	New York Transit	.....	July 15, 26	150	34½	35½	34½	35½	+ 1
80½	64	91	70	4,000,000	100	Northern Pipe Line	$3S.A.	July 1, 27	50	83¾	83¾	83¾	83¾	— ¼
67¾	55¾	64¼	52	60,000,000	25	Ohio Oil Co	‡50cQ	Sept. 15, 27	4,200	59	60¼	59	59¼	+ ¼
24¾	15	31	12	10,000,000	25	Penn Mex. Fuel	.....	May 21, 25	3,400	29⅞	30¼	28½	29	— 1
60¼	48	55½	45¾	60,000,000	25	Prairie Oil & Gas	.....	Aug. 31, 27	11,300	47⅝	50¾	47⅝	48½	+ ⅝
137½	122¼	186	132	81,000,000	100	Prairie Pipe Line	$2.50Q	July 31, 27	250	176	176	175¾	176	— 1½
220	184½	201½	175½	4,000,000	100	Solar Refining	$5S.A.	June 20, 27	10	178	178	178	178	+ 2½
27	21	27¼	15½	5,000,000	50	Southern Pipe Line	.....	Mar. 1, 26	.....	.....	.....	.....	.....	.....
50	34½	41½	34½	20,000,000	25	South Penn Oil	50cQ	Sept. 30, 27	600	37	37¾	37	37¾	— ¾
57	49	77	55½	3,500,000	100	South West Pa. Pipe Lines	$1Q	Oct. 1, 27	50	71	71	71	71	0
70⅛	60½	75¾	64¾	228,415,463	25	S. O. Indiana	‡62½cQ	Sept. 15, 27	15,700	71⅝	73⅛	71⅛	72⅝	+ 1⅜
36½	16¾	20¾	15¾	8,000,000	25	S. O. Kansas	.....	June 16, 24	2,000	15¾	16¼	15¾	15¾	0
134⅝	108	123¾	111½	17,012,599	25	S. O. Kentucky	$1Q	Sept. 30, 27	500	119	120	119	119¾	+ ¾
51¼	42	49½	42	4,559,850	25	S. O. Nebraska	63cQ	Sept. 20, 27	1,200	42¾	43½	42¾	43	+ ¼
672	288	863	73	14,000,000	25	S. O. Ohio	62½cQ	Oct. 1, 27	700	75	75½	74¾	74¾	— 1⅛
120½	116½	122	117¼	7,000,000	100	do pfd	$1.75Q	Sept. 1, 27	130	119	119	118½	118½	+ ½
23	15½	21	14½	861,466	25	Swan Finch Co	.....	Nov. 1, 19	400	20½	21	20¼	20¼	— ¼
109¾	90¼	136½	95⅜	62,470,800	25	Vacuum Oil	‡50cQ	Sept. 20, 27	21,600	133	136	131⅛	131⅜	— 3⅞

*New high †New low xEx dividend ‡Also extras.

New York Bonds

Week Ending Oct. 28	High	Low	Last	Ch'ge
Amer. Rep. deb. 6s	101¼	100	101	+1
Assoc. Oil gold 6s	103	103	103	— ⅜
Atlantic Refg. deb. 5s	102½	101⅜	102	— ¼
Barnsdall Corp. 6s	98¼	97⅝	97¾	+ ⅛
Barnsdall Corp. 6s ex war	90½	89⅞	90½	+ ⅛
Cal. Pet. 5s	95¼	95	95	— ¼
Cal. Pet. 5½s	100	99½	100	+ ⅛
General Asphalt 6s	111½	107¾	112¼	+4¾
General Petroleum 5s	101¾	101½	101⅝	+ ⅛
Humble Oil & Refg. 5½s	102⅝	102⅜	102⅜	— ¼
Humble Oil 5s	99¾	99¼	99½	— ⅜
Mid-Cont. Pet. 6½s	104⅞	104½	104¾	0
Pan Amer. P & T 7s	105½	105¼	105¼	— ¾
Pan Amer. P & T 6s	102¾	102½	102½	0
Pan Amer. P & T 6s	94	93	94	+ 1
Pierce Oil deb. 6s	102½	102½	102½	+ ½
Simms Pet. cvt. 6s	100½	100⅛	100⅛	— ⅛
Sinclair Con Oil Col 7s	99⅜	98¾	98⅞	— ¼
Sinclair Con. Oil con 6½s	94½	93¾	94	0
Sinclair Con. Oil 6s-D	98½	98	98⅛	— ¼
Sinclair Crude Oil 6s	100⅛	100⅛	100⅛	— ¼
Sinclair Pipeline 5s	93¾	93¼	93⅜	— ⅛
Skelly Oil 5½s	95	94⅜	94¾	— ¼
S. O. of N. Y. 4½s	96¼	95⅞	96⅛	0
S. O. of N. J. deb 5s	103¼	102¾	102⅞	0
Superior Oil 7s	102	102	102	0
Union Oil of Cal. 1st 5s	101⅜	101⅜	101⅜	— ⅛

New York Curb Bonds

Week Ending Oct. 28	High	Low	Last	Ch'ge
Beacon Oil 6s '36	100	99⅛	99⅛	—1⅜
Cal. Pet. 5s	.....	.....	.....	.....
Cities Service 5s '66	90	89¾	90	+ ⅛
Cities Service 6s '66	101⅝	101⅜	101⅜	— ⅛
Cities Service G 5½s '42	93⅞	93⅝	93⅝	— ⅛
Empire Oil 5½s wi	92⅝	92¼	92¼	— ¼
Galena S. O. 7s '30	92	92	92	— ¼
Gen'l Pet. 6s '28	101¼	100¼	100¼	— ¼
Gulf Oil 5s '37	100⅜	100⅛	100⅞	+ ⅜
Independent Oil 6s '39	94½	93½	94¼	+ ⅜
Pure Oil 6½s '33	103½	103⅛	103⅛	0
Pure Oil 5½s '37	99⅜	99¼	99¼	— ⅛
Richfield Oil 6s wi, '41	94½	93¾	93¾	0
S. O. N. Y. 6½s '33	104½	104¼	104¼	— ¼
Sun Oil 5½s '39	100¾	100½	100¾	0
Trans. Cont. Oil 7s '30	111	109½	109¼	— ¼
United Oil Prod. 8s '31	70	68	68	—2⅛
Warner-Quinlan 6s '42	94½	94	94	—2½

The Texas Corp.—T. Rieber, formerly president of the Galena Signal Oil Co. of Texas elected vice-president in charge of export sales.

New York Curb Market

1926 High	1926 Low	1927 High	1927 Low	Par Value	Stocks	Transactions Week Ended Oct. 29 Sales	First	High	Low	Last	Change
6¾	45	2⅛	.55	$5	Amer. Con. Oilfields	36,000	85	90	77	84	— 4
14½	4	7½	3	N.P.	Amer. Maracaibo	3,500	3⅛	3¼	3⅛	3¼	+ ⅛
8⅜	5¾	9¾	6¾	$10	Arkansas Nat. Gas	5,200	8½	9	8½	8⅝	+ ⅛
20⅜	14⅜	20½	15½	N.P.	Beacon Oil	.....	.....	.....	.....	.....	.....
85¼	60	33¾	20½	N.P.	British American	200	32½	32½	32½	32½	0
28⅜	9¼	28¼	14⅜	25c	Carib Syndicate(new)	1,900	18⅜	19⅜	18⅜	18¾	— ¼
.....	.....	26	16½	...	do ctfs. of deposit	.....	.....	.....	.....	.....	.....
51	37½	58¾	40¼	$20	Cities Service	24,000	50¼	50¾	49½	50⅛	+ ⅛
92½	82⅜	95	87	100	do pfd	2,200	93⅜	94	93⅜	94	+ ⅜
8⅜	7⅜	8¾	7⅜	10	do pfd. B	100	8⅝	8⅝	8⅝	8⅝	0
25¼	19	29¼	22½	10	do banker's shares	200	24¾	24¾	24⅝	24⅝	— ⅛
3½	1¾	3¼	1¾	$1	Colombia Syndicate	10,800	1⅛	2⅜	1⅞	1⅛	0
10⅜	8⅛	9½	7	10	Consolidated Royal	.....	.....	.....	.....	.....	.....
16	10	14⅞	9⅞	N.P.	Creole Syndicate	8,300	10	10¼	10	10⅛	0
7⅜	1½	3	63	N.P.	Crown Central	200	95	100	95	100	+30
8½	½	12	4	...	Darby Petroleum	.....	.....	.....	.....	.....	.....
.....	.....	11½	5	...	do trust ctfs	300	5	5⅛	5	5⅛	+ 1⅛
4	1¼	2½	1¼	N.P.	Derby Oil & Refining	.....	.....	.....	.....	.....	.....
19	13	16¾	7⅛	N.P.	do pfd	.....	.....	.....	.....	.....	.....
7½	2½	3¾	1	N.P.	Gibson Oil	13,200	1⅞	2⅛	1¾	2⅛	+ ⅛
2	.63	1⅝	40	N.P.	Gilliland ctfs	.....	.....	.....	.....	.....	.....
98	82	96½	86¼	$25	Gulf Oil Corp	11,000	92	96⅜	92	92¼	+ 1¼
3⅜	1	2¼	1⅛	N.P.	Kirby Petroleum	.....	.....	.....	.....	.....	.....
12¼	5¾	10⅞	6	N.P.	Leonard Oil & Dev	1,800	7½	7⅞	7¼	7¼	— ¼
27	20	27½	20	N.P.	Lion Oil & Refg	1,300	20	20¼	†20	20¼	— ¼
46	31	56	37	$25	Lone Star Gas	13,600	51⅞	*56	50½	54½	+ 3¼
2¾	2	2⅞	.87	1	Magdalena Synd	2,000	95	100	95	100	+ 5
5½	1⅞	3	1½	10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
1¾	1¼	1½	1	1	Mountain & Gulf	.....	.....	.....	.....	.....	.....
26	23	26⅞	22¾	10	Mountain Producers	5,000	24	24⅝	24	24¼	+ ¼
6¾	5	5⅞	4⅝	5	New Bradford	200	4¾	4¾	4¾	4¾	0
11¾	2	6¾	4	10	New England Fuel	100	5	5	5	5	— ¼
17	9⅛	16	9¼	1	New Mex. & Ariz	4,900	10	10⅝	9¾	10¼	+ ½
17	8	13¼	9	25	New York Oil	4,000	11	11	11	11	0
12⅛	8¾	12⅝	10	N.P.	North Cent. Texas	.....	.....	.....	.....	.....	.....
44¾	33	.....	.....	$25	Ohio Fuel Corp	.....	.....	.....	.....	.....	.....
33	28½	27½	21¼	...	Okla. Nat. Gas ctfs	.....	.....	.....	.....	.....	.....
10⅛	5⅞	9⅜	1¾	N.P.	Pandem	1,900	2¾	2¾	2⅜	2½	— ¼
12¼	11¾	12⅛	7	N.P.	Pantapec Oil	4,300	8⅝	8¾	8¼	8¼	— ¼
2¾	.20	.37	.25	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
22¾	12	13¼	6	$10	Pennok Oil	140	6	6¾	†6	6¾	+ ¼
38	14⅜	24⅜	13½	25	Red Bank Oil	300	.....	14	†13½	13½	0
30¼	12	15½	2	N.P.	Reiter-Foster	5,900	6¼	6⅝	6	6½	+ ¼
27½	22	27½	15	$25	Richfield Oil	100	20	20	20	20	+ 1¼
7½	4½	7	4½	N.P.	Ryan Consolidated	500	5⅞	5⅞	5⅝	5⅝	— ¼
10	7½	8	6	$10	Salt Creek Cons	.....	.....	.....	.....	.....	.....
36	26⅞	32	27¼	10	Salt Creek Prod	4,200	29	29⅞	28⅞	29¼	+ ⅜
4⅜	1⅜	7	2	5	Savoy Oil	400	2½	3	2½	3	+ 1
27	7⅝	26½	17	10	Tidal Osage	1,200	20⅜	21⅝	20	20	— ⅜
25¾	7⅝	23¾	15	10	do non-voting	1,400	18½	20⅜	18½	19	+ ⅛
.....	.....	88	63½	100	Transcontinental pfd.	200	75	75	74½	74½	— ½
3	4⅛	7⅜	4¼	5	Venezuelan Petrol	2,600	4¾	5⅛	4¾	5	0
31⅜	22	32⅝	20⅜	N.P.	Wilcox Oil & Gas	400	21¼	21½	21¼	21¼	0
9½	4⅜	8	4⅞	$1	Woodley Petroleum	200	4⅞	5	†4⅞	5	0

*New High †New Low xEx Dividend

Refined oil inventory was $5,286,433 compared with $6,647,035 Dec. 31. Net fixed assets were increased $3,000,000 in the nine months to $58,979,207 Sept. 30.

Marland's current assets Sept. 30 were $46,044,889 and current liabilities $3,598,426, compared with $32,709,286 and $8,766,901, respectively, Dec. 31. Bank loans amounting to $4,000,000 which appeared in the Dec. 31 liabilities were paid off when the company sold $30,000,000 5 per cent notes this year. Stock was issued this year against prepaid subscriptions for 385,914 shares at $49 a share. A reserve of $7,593,102 for intangible drilling costs was set up this year which accounts, in large measure, for the company's showing a loss on operations.

Mid-Continent Petroleum Corp. does not set aside reserves for depreciation and depletion until the end of the fiscal year, which makes a definite comparison of its earnings this year impossible. The same condition applies to Phillips Petroleum Co. whose income before reserves is about 60 per cent of what it was last year.

Richfield Oil Co.'s production of crude oil and casinghead gasoline in the first nine months of 1927 was 4,284,155 barrels, compared with 2,907,456 barrels in the same time last year, a gain of 47 per cent, James A. Talbot, president, reported to stockholders. Sept. 30 the company had 176 wells producing and 11 wells drilling. Average production was 19,000 barrels a day. Gasoline sale had exceeded 100.000 gallons in the nine months ended Sept. 30, Mr. Talbot reports, and gross sales of all products had exceeded $29,000.000, a gain of $4,000,000 over sales in the corresponding time of 1926.

Tidal Osage Oil Co.'s production in the first nine months of this year totaled 3,539,138 barrels, compared with 969,424 barrels in the corresponding time of 1926.

White Eagle Oil & Refining Co.'s report is another that reflects low prices for crude and refined products.

Third quarter earnings figures follow:

	1927	1926
American Republics	*$54,184	$1,014,716
Barnsdall Corp.	1,705,809	687,084
California Pet. Corp.	585.578	1,835.868
Houston Oil Co.....	607,768	‡749,364
Independent Oil & Gas Co.	884,801	842.482
Marland Oil Co.	*1,040,311	5,868,553
Mid-Continent Pet. Co.	††2,558,402	††4,203,116
Phillips Petroleum Co.	††4,014,286	††10,626.000
Pierce Petroleum Co...	225.244	120,239
Richfield Oil Co.....	†2,732,172	.....
Texas Pacific Coal & Oil	‡516,681	‡1,065,093
Tidal Osage Oil Co.....	†18,560	403,242
White Eagle Oil & Ref. Co.	††603,451	††1,168,396

*Loss. †Before federal income taxes. ‡Before depreciation and depletion.

Skelly Oil Co.—H. M. Stalcup, vice president in charge of production, has been elected a director.

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